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Gleanings in Bee Culture



Our Old Friend, Buckwheat.

VOLUME L

AUGUST, 1922

NUMBER 8

\$1 Order Your Queens Now \$1

QUEENS OF SUPREME QUALITY.

Just think of it. Only \$1 for one of my bright three-banded northern-bred Italian queens, after 19 years of select breeding. I have produced a strain of bees that get the honey and stand the northern winters. Last year every order was filled by return mail. Expect to do the same this year. This is the kind of letters I receive daily:

"Dear Mr. Major: How early in spring could you fill an order for one dozen Italian queens? My experience and observation with your strain of Italians have shown them to be extremely gentle, superior as workers, and unexcelled in the beautifully white and even capping of the honey. Yours very truly,
"Orel L. Hershiser."

Mr. Hershiser is one of our state inspectors and has been a beekeeper almost all his life; also inventor of the Hershiser wax-press. Does he know good bees when he sees them? Does a duck swim? I guarantee pure mating, safe arrival, free from disease and health certificate furnished with each shipment.

Select Untested, from 1 to 100, \$1.00 each.
Extra-Select Breeders, \$5.00 each.

All candy in queen-mailing cages mixed to government regulations; all orders greatly appreciated and acknowledged the same day received.

H. N. MAJOR, SOUTH WALES, N. Y.

1922 SUMMER PRICES 1922

--ON--

Quality Bees and Queens

There is bound to be a rush re-queening during July, August and September. For this occasion we offer the following prices:

1 Untested Queen.....	\$1.00
25 or over.....	.90
1 Select Untested Queen.....	1.25
25 or over.....	1.10
1 Tested Queen.....	1.75
25 or over.....	1.25
1 Select Tested Queen.....	2.00
25 or over.....	1.50

No package bees or nuclei shipped the remainder of this season.

Safe arrival and satisfaction guaranteed.

THE A. I. ROOT COMPANY OF TEXAS
BOX 765. SAN ANTONIO, TEXAS.

"Griggs Saves You Freight."

Toledo, Ohio

BEES SUPPLIES ARE ADVANCING

with lumber. Why not lay in your stock now at old prices? Send for our special

BIG DISCOUNT SHEET.

This will save you money.

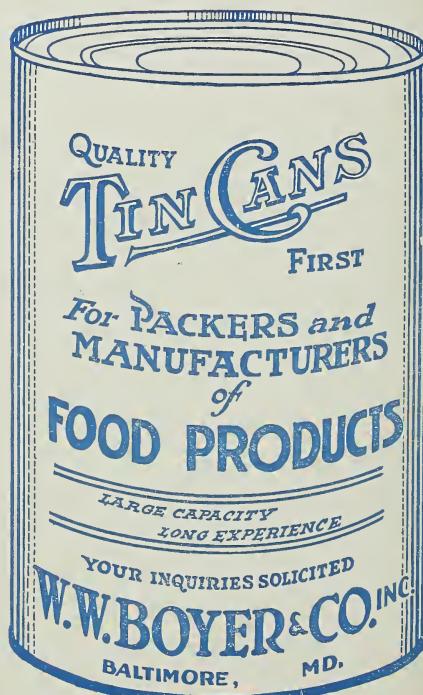
Honey Shipping Cases and Pails ready for quick shipment. Extractors, Uncapping Cans and Storage Tanks, all sizes at lowest cash prices.

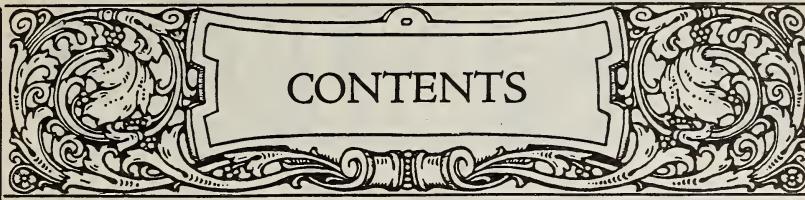
We carry both Lewis and Root Goods. Specify which you wish. Free Catalog of either make sent upon request.

HONEY WANTED
in exchange for supplies.
NEW CROP ONLY.

Griggs Bros. Co. TOLEDO, OHIO.

"Griggs Saves You Freight."





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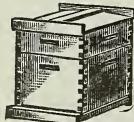
Geo. S. Demuth and E. R. Root Editors	A. I. Root Editor Home Dept.	H. H. Root Assistant Editor	H. G. Rowe M'n'g Editor
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HONEY WANTED HONEY

WE ARE in the market for both comb and extracted. Send sample of extracted, state how put up, with lowest price, delivered Cincinnati. Comb honey, state grade and how packed, with lowest price delivered Cincinnati. We are always in the market for white honey, if price is right.

C. H. W. WEBER & CO.

2163-65-67 Central Ave., Cincinnati, Ohio.



MR. BEEKEEPER ---

We have a large plant especially equipped to manufacture the supplies that you use. We guarantee all materials and workmanship. We ship anywhere. We allow early order discounts and make prompt shipments. *We pay the highest cash and trade prices for beeswax.*

Write for free illustrated catalog today.

LEAHY MFG. CO., 95 Sixth Street, Higginsville, Missouri

Texas Beekeepers should write to A. M. Hunt, Goldthwaite, Texas.

SUPERIOR FOUNDATION

"BEST BY TEST"

Do not fail to secure our 1922 reduced prices on
SUPERIOR FOUNDATION. State quantity desired.

We also manufacture Hoffman frames, dovetailed beehives, etc.
Quality unexcelled; prices on request.

SUPERIOR HONEY COMPANY, OGDEN, UTAH

(Manufacturers of Weed Process Foundation.)



A MESSAGE FOR YOU

MUTH
Bee Supplies
1922 Catalogue



The FRED W. MUTH CO.
CINCINNATI, OHIO

You need our new 1922 bee supply catalog more than ever before. Have you received one? Many new articles are listed for the saving of labor and greater honey production. Our attractive prices, superior quality and prompt service will always be appreciated by beekeepers.

Send a list of your requirements to us.

THE FRED W. MUTH COMPANY,
Pearl and Walnut Streets,
Cincinnati, Ohio.

Established 1885.
Write us for catalog.

BEEKEEPERS' SUPPLIES

The Kind You Want and the Kind That Bees Need.

We have a good assortment in stock of bee supplies that are mostly needed in every apiary. The A. I. Root Co.'s brand. Let us hear from you. Information given to all inquiries. Beeswax wanted for supplies or cash.

John Nebel & Son Supply Co.
High Hill, Montgomery Co., Mo.



LEWIS 4-WAY BEE ESCAPES



Four exits from supers. Fits all standard boards. Springs of coppered steel. Made of substantial metal. Price each 18c prepaid. Made by G. B. LEWIS COMPANY, Watertown, Wis., U. S. A. For Sale by all Dealers.

Honey Containers

We have some interesting prices to offer on honey containers; send us a list of your requirements and let us quote you our prices.

2½-lb. cans in reshipping cases of 24 and crates of 100 and 500.

5-lb. pails in reshipping cases of 12 and crates of 100 and 200.

10-lb. pails in reshipping case of 6 and crates of 100.

1-gallon square or oblong cans with 1¾-inch screw cap in boxes of 6.

1-gallon square or oblong cans with 1¾-inch screw cap in crates of 100.

60-lb. square cans with 1¾-inch screw cap in cases of 2 cans.

16-oz. round glass jars in reshipping cases of 2 dozen.

6½-oz. tin top tumblers in reshipping cases of 4 dozen.

Shipping cases for comb honey for any style sections in the 24-lb. or 12-lb. size.

Send for our catalog showing full line of Bee Supplies.

AUGUST LOTZ CO.
BOYD, WISCONSIN.

HONEY MARKETS

U. S. GOVERNMENT MARKET REPORTS. Information from Producing Areas (First Half of July).

CALIFORNIA POINTS.—The nectar flow from orange has now finished, and the flow from sage is nearly over. Orange yield is reported light to fair, sage flow generally good. Fair eucalyptus flow is being secured in Alameda County. Bees in southern California said to be now gathering mostly alfalfa nectar. Beekeepers are busy extracting. Old-crop honey practically exhausted. Demand light and market dull. Few sales reported, carloads f. o. b. usual terms, as follows: White orange 9-9½c, few reported quoting 8½c, white sage 8½-8¾c, light amber sage 6½-7c, light amber alfalfa 5¾-6c. Beeswax, cash to beekeepers, 22-24c per lb.

INTERMOUNTAIN REGION.—Prospects differ widely in different areas. In Montana an unusually large crop is said to be in prospect. Southern Utah will have a good crop, but in the northern part of the state cold winds have proved harmful to the flow. Heavy flow secured in eastern Washington from first crop alfalfa. Sweet clover in Colorado is suffering from drought where irrigation is not abundant and from grasshoppers; and in Idaho alfalfa weevils are said to be numerous. Little surplus yet secured in Salt River Valley. Some beekeepers will commence extracting new crop early in July; others will wait until August. Shipments have been light recently, as supply of old honey is pretty well disposed of. Comb honey, especially in Montana, said to be still rather abundant. Small lot sales reported of white sweet clover and alfalfa, largely in small tins, at 9½-10½c. Some 60-lb. cans sold by beekeepers to near-by dealers at 8½ per lb. Sales of fancy and No. 1 white comb reported at \$4.50, and of No. 2 white alfalfa at \$3.00. For average yellow beeswax, some beekeepers are receiving 2½c cash or 24c in trade; other prices range slightly higher.

TEXAS POINTS.—The crop thus far has been generally poor, due to too much rain. If recent spell of dry weather continues, prospects will improve. Many colonies have gathered little more than enough to live on, and some colonies reported starving, with no honey on which to rear brood. Above conditions refer to north Texas. South Texas reports conditions more nearly normal. The price for 60-lb. cans extracted is reported as 8½c per lb. for white and 7½c for light amber. In 10-lb. pails, 12-13c per lb. is secured for case lots. Bulk comb honey, 6/10s, is listed at \$9.00 per case for light-colored, mild honey. Beekeepers receiving 25c per lb. for beeswax.

EAST CENTRAL AND NORTH CENTRAL STATES.—Cold nights, cloudy and rainy weather in June hindered bees from gathering nectar in Wisconsin, Michigan and parts of Ohio, but even so a fairly good crop has been secured. In some sections a heavy yield was obtained, one beekeeper reporting 120-lb. surplus about ready to take off. Basswood is expected to bloom heavily. Inquiry coming in already for new honey. Practically nothing is being held over from last season, in strong contrast with the situation a year ago. 60-lb. cans white extracted selling at 12c per lb. in case lots. Small lots No. 1 white clover sold at \$4.00-4.50, some \$4.80 per 24-section case.

PLAINS AREA.—Abundant rains early in July, after the drought during May and June, helped raise prospects in Iowa towards normal. Kansas also reports an unusually good crop. Honey is said to be of fine quality. American foul brood is making inroads in some apiaries. Some beekeepers will start extracting late in July. Sales extracted white clover in 60-lb. cans reported to bottlers at 10c per lb.

NORTHEASTERN STATES.—Honey flow intermittent as a result of too much cloudy and rainy weather in many sections. It is thought by some that the rain has been instrumental in causing the very heavy swarming in some apiaries; this swarming is about over. The rain has cut the intended buckwheat acreage and the crop will be late. Basswood came on early, and is blooming

prolifically, but is not yielding as well as during some years. Honey running unusually light in color this season. European foul brood reported as prevalent in some sections. Numerous inquiries are being received by some beekeepers for later shipment. Few sales white extracted in 60-lb. cans, 12c per lb.

WEST INDIES.—Report from Porto Rico indicates that honey is just beginning to come in in the hill districts; and the yield has been poor thus far all over the island. Beekeepers receiving 4c per lb., by the barrel. Shipments from Cuba have fallen off somewhat. One large lot reported going to Antwerp at 57c per gal., including cost and freight.

SOUTHEASTERN STATES.—The summer flow is now on in Georgia from cotton and Mexican clover and some surplus is being stored. Honey plants in good condition. Surplus flow nearly over. Some beekeepers report that the remainder of the yield will be used entirely for increase and for winter stores. A fair demand reported for both the better grades of honey and for queens. Light flow reported from button bush in Louisiana. In Mississippi heavy rains and extremely hot weather have damaged honey plants. White honey, in barrels and tins, reported selling at 10c per lb., light amber at 8-9c, and amber at 6-8c. Best yellow beeswax reported selling in Alabama at 21-23c per lb., and in Mississippi and Georgia at 25c.

Telegraphic Reports from Important Markets.

BOSTON.—Since last report 1 car Porto Rico by boat arrived. Demand for extracted honey limited and practically none for comb. Comb honey cleaned up except a little candied stock. Prices show little change. Extracted: Sales to confectioners and bottlers: Cuban and Porto Rican, amber 80-85c per gal., white sage 15-16c per lb. for California stock.

CHICAGO.—Since last report 700 lbs., Ill., 200 lbs. Ia. and 4,400 lbs. Colo. arrived. Supplies remain comparatively light. Demand very slow, movement very light. Market dull and about steady on comb, weaker on extracted, apparently largely a reflection of the weak tone of f. o. b. market. Comb: Sales to retailers: 24-section cases Iowa and Wisconsin, mixed clovers No. 2, \$3.00. Colorado and Arizona, alfalfa and mixed clovers No. 1, \$4.00-4.25, few \$4.50. Extracted: Sales to bottlers and bakers, Nevada, white sweet clover and sage, mixed 10-10½c. Arizona, light amber alfalfa and mountain flowers 8½c. Beeswax: Supplies light. Demand moderate, market steady. Sales to laundry supply houses and wholesale druggists, Colorado, Arizona and Montana, light 31-32c, dark 28-30c. Brazilian, light 28-30c. Central and South American, dark 22-26c.

NEW YORK.—Domestic receipts very light, foreign receipts limited. Demand limited, movement light, market dull, few sales. Extracted: Spot sales to jobbers, wholesalers, confectioners, bakers and bottlers, domestic, per lb. California, light amber alfalfa 8-8½c, light amber sage 9-9½c, white sage 11-11½c, few 12c, white orange 12-12½c. Intermountain Region, white sweet clover 10-11c. New York, no sales. South American and West Indian refined per gal., 65-70c, mostly 65c. Beeswax: Foreign receipts limited. Demand moderate, movement limited, market steady. Spot sales to wholesalers, manufacturers and drug trade, South American and Chilean, light 29-30c, Brazilian, 28-29c, few 30c. African, dark 23-25c, few 26c. Cuban, light 28-29c, darker 22-25c.

PHILADELPHIA.—Extracted: Supplies very light. Demand is not active but market is strong. Few sales to jobbers, San Domingo, light amber various flavors 70c. Porto Rico, light amber various flavors 73c per gal. Beeswax: Supplies are light but sufficient for demand, which is slow. Market steady. Sales to manufacturers, per lb., Chilean, yellow, 32c, African, yellow 30c.

ST. LOUIS.—Since last report few lots southern extracted light amber arrived by express amounting to about 5,000 lbs. Since last report demand shows no improvement, continuing light. Practically no movement, market very dull. Comb: Sales to wholesalers and jobbers in 24-section cases, Idaho and California, white clover and alfalfa No. 1 medium \$5.00-6.00. Extracted: Sales

to wholesalers and jobbers, per lb. in 5-gal. cans, California light amber alfalfa 7½-9c. Beeswax: No receipts reported since last report. No change in market. Ungraded average country run quoted nominally to jobbers at 26c per lb.

H. C. TAYLOR,
Chief of Bureau of Markets.

Special Foreign Quotations.

Liverpool.—Honey market dull, very little inquiry. The price is from 9 to 9½c per pound in American currency.

The Opinions of Honey Producers Themselves as Reported to Gleanings in Bee Culture.

Early in July we sent to actual honey producers and some associations the following questions:

1. What is the average yield per colony to date this season in your locality? (a) Extracted honey? (b) Comb honey?
2. How does this compare with the average yield for your location? Give answer in per cent.
3. What portion of the entire crop of surplus honey does this represent in your estimation? Give answer in per cent.
4. What price are producers being offered for the new crop of honey at their station for honey

The price of beeswax is 28 to 29 cents per lb. London, Eng., July 5. Taylor & Co.

The A. I. Root Company's Quotation.

The following are prices we have paid since our last quotation, F. O. B. shipping point, for honey in car lots: White orange, 9½c; water white sage, 9c; water white catsclaw, 8½c; white mesquite, 6c; water white alfalfa, probably mixed with sweet clover, 7½c. We are in the market for one or two cars of white clover honey for which we can pay F. O. B. shipping point 10½c.

The A. I. Root Company.

State.	Reported by	Yield per col.	% Av.	% Ent.	In large lots.	To Retailers.	Pct. Sold	Movement				
		Ex. Comb.	Yield.	Crop.	Ext. Comb.	Ext.	Comb.	Locally. ment.				
Ala.	J. C. Dickman	40	30	80	80	\$0.06	\$5.25	\$0.75	\$6.50	95	Slow	
B. C.	W. J. Sheppard	50	..	100	75	.28	..	1.75	..	75	Slow	
Ark.	J. V. Ormond	50	50	150	50	..	..	1.00	..	75	Slow
Ark.	J. Johnson	..	20	100	30	..	..	..	..	75	Rapid
Cal.	L. L. Andrews	80	20	140	90	.07	..	1.00	..	2	Slow	
Cal.	M. C. Richter	15	..	10	..	..	..	1.50	..	50	Fair
Colo.	B. W. Hopper	50	25	150	50	..	..	.60	4.50	5	Fair
Conn.	A. Latham	..	..	..	..	..	..	..	..	75	Slow
Fla.	C. C. Cook	90	..	175	50	.08	..	.60	..	90	Fair	
Fla.	H. Hewitt	45	..	125	80	.08	..	.75	..	..	Slow
Fla.	W. Lamkin	75	..	125	..	.08	2.40	.65	3.12	25	..	
Ga.	J. J. Wilder	60	40	120	100	.10	4.00	.75	5.00	70	Fair	
Ill.	A. C. Baxter	80	..	90	70	..	..	1.10	..	100	Slow
Ill.	C. F. Bender	..	50	100	95	..	4.80	..	5.50	..	50	Good
Ill.	A. L. Kildow	30	60	115	60	..	..	1.10	6.00	..	10
Ind.	T. C. Johnson	75	60	125	75	..	..	1.10	6.00	..	Slow
Ind.	E. S. Miller	50	25	100	50	..	..	.80	4.80	100	Slow
Ind.	J. Smith	25	..	75	50	..	..	1.25	..	100	Fair
Iowa	E. G. Brown	100	..	100	5080	5.00	..	20	Fair
Iowa	F. Coverdale	40	25	90	8075	5.00	..	15	Fair
Iowa	W. S. Pangburn	100	60	100	4580	5.50	..	10	Slow
Kan.	J. A. Nininger	40	25	100	5075	5.00	..	100	Fair
Me.	O. B. Griffin	8	..	8	35	..
Md.	S. G. Crocker, Jr.	30	20	60	90	..	..	..	..	100	Slow
Mass.	O. M. Smith	..	..	..	..	..	..	..	..	100	Slow
Mich.	I. D. Bartlett	75	..	150	75	..	..	.75	..	75	Slow
Mich.	E. D. Townsend	65	..	65	90	..	..	..	..	..	..
Mich.	F. Markham	80	50	80	100	.11	..	.85	..	90	Slow	
Mo.	J. H. Fisbeck	60	..	110	75	..	..	..	..	100	Slow
Mo.	J. W. Romberger	80	70	100	65	.16	4.75	.90	5.25	100	Slow	
Nev.	E. G. Norton	50	..	..	..	..	..	..	..	..	2
Nev.	L. D. A. Prince	25	25	75	50	..	..	..	..	10	Slow
N. Y.	Adams & Myers	30	..	50	50	..	..	1.00	6.00	75	Fair
N. N.	G. B. Howe	..	..	100	90	..	..	1.00	7.00	95	Good
N. Y.	F. W. Lesser	60	40	100	60	..	..	..	..	10	Slow
N. Y.	N. L. Stevens	10	..	25	20	..	..	..	..	10	Slow
N. C.	C. S. Bumgarner	..	50	110	75	..	..	..	..	100	..
N. C.	C. L. Sams	45	35	100	75	.12	4.90	1.00	5.00	80	Fair	
Ohio	E. G. Baldwin	30	30	30	40	..	..	6.00	..	50	Fair
Ohio	F. Leininger	100	75	100	100	..	4.80	..	.75	..	25	Fair
Ohio	J. F. Moore	80	..	90	90	..	..	.80	4.25	10	Slow
Oklra.	J. Heueisen	50	20	100	60	..	..	1.00	..	100	Fair
Oklra.	C. F. Stiles	30	..	80	80	..	..	..	..	100	Fair
Ore.	E. J. Ladd	75	50	100	..	..	..	..	..	100	Slow
Ore.	H. A. Scullen	50	..	90	90	..	..	1.15	6.00	98	Fair
Pa.	H. Beaver	20	..	80	50	..	..	.65	..	..	Slow
Pa.	D. C. Gilham	40	32	110	70	..	..	1.50	7.00	75	Slow
Pa.	G. H. Rea	20	15	30	50	..	..	..	..	75	..
R. I.	A. C. Miller	..	..	80	..	..	..	..	..	100	Slow
S. D.	L. A. Syverud	50	30	115	.55	..	..	..	..	80	Slow
Tenn.	J. M. Buchanan	50	25	75	.90	..	..	1.00	..	90	Slow
Tex.	T. A. Bowden	10	..	5	.50	..	..	..	..	100	Fair
Utah.	M. A. Gill	50	30	150	.40	.08	4.00	.50	4.50	75	Fair	
Vt.	J. E. Crane	..	7	100	.15	..	..	..	..	..	Slow
Va.	T. C. Asher	15	12	25	100	.20	6.00	1.00	6.00	..	50	
Wash.	W. L. Cox	25	..	..	25	..	..	.85	..	..	Slow
Wash.	G. W. B. Saxton	25	..	..	..	10	..	..	..	100	Fair
Wash.	G. W. York	..	..	..	..	..	..	..	..	100	..
W. Va.	T. K. Massie	..	25	60	.50	..	..	..	..	100	Fair
Wis.	N. E. France	Fr.	Fr.	100	.60	..	..	.75	..	75	..
Wis.	E. Hassinger, Jr.	60	40	95	100	..	..	.85	6.60	85	Fair
Wis.	H. F. Wilson	75	50	100	..	..	..	..	..	100	Slow

A Chance to Save Some Money on SHIPPING CASES

100 Regular Shipping Cases, 4 $\frac{1}{4}$ x 1 $\frac{1}{2}$, packed 50 per crate....	\$25.20
400 Regular Shipping Cases, 4 $\frac{1}{4}$ x 1 $\frac{7}{8}$, packed 50 per crate....	26.10
250 Regular Shipping Cases, 4x5x1 $\frac{1}{8}$, packed 50 per crate....	25.20
230 Regular Shipping Cases, 4x5x1 $\frac{1}{8}$, packed 10 per crate....	5.25
90 Regular Shipping Cases, 4 $\frac{1}{4}$ x 1 $\frac{7}{8}$, packed 10 per crate....	5.50
210 Regular Shipping Cases, 4 $\frac{1}{4}$ x 1 $\frac{1}{2}$, packed 10 per crate....	5.25

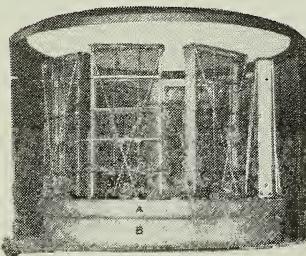
All cases listed are single-tiered with glass K. D.

The A. I. Root Company

873 Massachusetts Ave.

Indianapolis, Indiana

Lewis Extractors



Lewis-Markle Power Honey Extractor.
Tank cut away.

A—Pan over machinery. B—Bottom of tank.

Made in 4 and 8 frame sizes. Accommodates 2 sizes of baskets, power operation, machinery underneath, no vibration, tank and basket instantly removable for cleaning. A commercial success. Circular free. Address:

G. B. LEWIS COMPANY

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Dear Mr. Beekeeper:

Have you realized how much a nice, attractive package adds to the price of your honey? We are prepared to take care of your wants for cans, pails, jars, shipping cases, cartons, labels. Write today, advising us just what you want. You will be surprised at the very special prices that we can make you on honey packages of all kinds.



F. A. Salisbury

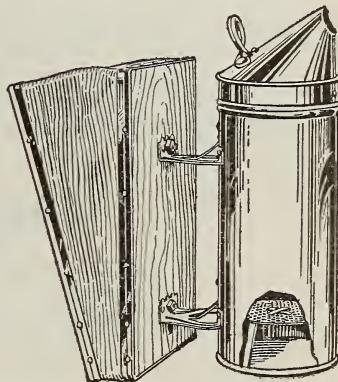
1631 W. Genesee St., Syracuse, N. Y.



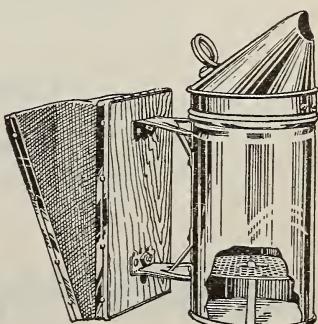
**NEW BINGHAM
BEE SMOKER**
PATENTED



BIG SMOKE—With Shield
Fire Pot, 4 x 10.



CONQUEROR.
Fire Pot, 3 x 7.



LITTLE WONDER.
Fire Pot, 3 x 5½.

The Smoker You Ought to Own

THE most important invention in beekeeping, as little can be accomplished without the Bee Smoker.

The new Bingham Bee-Smoker is the most efficient and durable machine on the market. The standard for over 40 years in this and many foreign countries, and is the all-important tool of the most extensive honey producers of the world.

Comes with metal legs, metal binding and turned edges. The four larger sizes have hinged covers. The fire grate is of very substantial material, with an abundance of draft holes, the 4-inch size having 381 holes, equal to an opening of 2-inch square.

A valve in the bellows of the larger sizes makes the Smoker respond to the most delicate touch.

The new Bingham comes in six sizes, including the Big Smoke, which is furnished both with and without shield. The larger sizes are best, as they hold more fuel, give more smoke, require filling less often, and are especially recommended to those who work with their bees several hours at a time.

Write for our complete catalog of bee supplies and accessories. Special circular of all sizes of Bingham Smokers free for the asking.

A. G. WOODMAN CO.

238 Scribner Ave., N. W.

GRAND RAPIDS, MICH., U.S.A.

A SUPERIOR
QUALITY AT
LESS COST

Supplies

(MADE BY THE DIAMOND MATCH CO.)

A SUPERIOR
QUALITY AT
LESS COST

The Diamond Match Co., who manufacture our supplies, are the largest manufacturers in the world who make bee supplies. They own their own timber lands, mills and factories. We pass on the full advantage of the resulting low production cost to the Beekeeper.

One-Story Complete Dovetailed Hive

With metal telescope cover, inner cover, reversible bottom, Hoffman frames, nails, rabbets.

Standard Size.

Crate of five, K. D., 8-frame.....\$12.65
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With Hoffman frames, nails, rabbets.

Standard size, crate of 5, K. D., 8-fr.\$5.20
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For 4 x 5 x 1 $\frac{1}{2}$ sections including section-holders, fence-separators, springs, tins and nails.

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We guarantee pure mating and satisfaction the world over. Safe arrival is guaranteed in the U. S. and Canada.

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100 to 299, 70c; 300 up, 65c.

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OUR GUARANTEE: This simply means that, if any queen we sell is not satisfactory in every respect, we will replace her. Our breeding stock and methods of production are such that we can give this guarantee.

Untested.....One, \$0.75; ten or more, \$0.60 each.

Tested.....One, 1.75; ten or more, 1.50 each.

We have 2,000 Tested Queens, reared late last fall, that we will supply at our convenience at \$1.00 each, or ten or more at \$0.80 each.

Send for big bargain list of **BEE SUPPLIES**. New sixty-pound cans, two to the case, in lots of fifty cases, at 91c.

The Stover Apiaries, Mayhew, Miss.

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...ON...

Bee Supplies

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 Sections, 1 $\frac{1}{2}$, No. 1...\$10.00 per 1000
 Job lots of frames, regular
 size.....\$3.00 per 100
 Standard Hoffman frames,
 9 $\frac{1}{2}$ deep.....\$4.50 per 100
 Unspaced wedged top-bar frames,
 9 $\frac{1}{2}$ deep.....\$2.75 per 100

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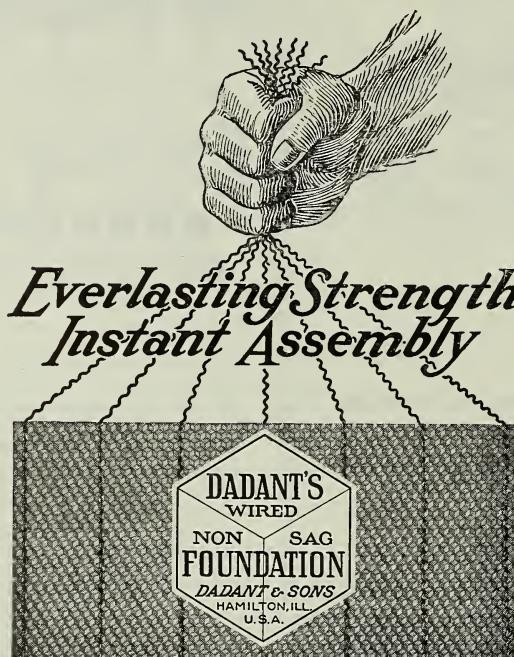
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Strength



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Delight
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I have tried Wired Foundation this year under exactly the same conditions and surroundings, as far as I could tell, with foundation that was wired horizontally. Every frame of the old-style foundation sagged badly and the Wired Foundation made perfect combs. I call it the greatest improvement modern beekeeping has had for many years.—P. C. W.

IAWA

I believe this foundation will prove a labor-saver. It can be inserted in a short time. Wiring frames is sure a tedious job at best. There is no sag in the foundation. I threw them quite hard in extracting and for new combs they stood up fine.—B. A. B.

WASHINGTON

There has been absolutely no sagging or stretching of cells. There is no question in my mind that this method of wiring foundation is a great step in advance of the old horizontal method, and these vertically wired combs are the best combs I have in my yard.—A. E. B.

TEXAS

We are glad to say that we have thus far gotten 93 per cent absolutely perfect combs. We have seen no evidence of vertical sagging.—E. G. L.

DADANT'S WIRED FOUNDATION may be used in new-style split bottom-bar frames or in the old-style one-piece bottom-bar frames with equal satisfaction. It is also adaptable to any size and style of brood or extracting frame.

COSTS NO MORE. Since Dadant's Wired Foundation cuts the cost and labor of wiring, its extra price of three cents per pound above the catalog prices of old-style foundation is thus more than returned to the beekeeper.

BEESWAX.—We need large quantities of beeswax and are paying good prices now. Ship to us at Hamilton, Illinois, or Keokuk, Iowa, or drop us a card and we will quote f. o. b. here or f. o. b. your own station as you may desire.

Wired Foundation is sold by all distributors of Lewis "Beeware" and Dadant's Foundation. Send them your orders.

DADANT & SONS, HAMILTON, ILLINOIS

GLEANINGS IN BEE CULTURE

AUGUST, 1922



EDITORIAL

THE American Honey Producers' League has elected new officers as follows: President, Prof. H.

New Officers of American Honey Producers' League. F. Wilson, Madison, Wis.; vice-president, Hon. Colin P. Campbell,

Grand Rapids, Mich.; and member of the Executive Committee, Prof. F. B. Padock, Ames, Iowa. The League is to be congratulated on the choice of men to direct it. May success crown their efforts.

was largely the result of the intensive local selling efforts of beekeepers. Honey was advertised and sold in every conceivable way locally, thus opening up innumerable channels. This year the effort should even be greater than that of last year, in order to hold the ground gained and, if possible, make additional gains. The sum total of the individual efforts of thousands of beekeepers in pushing the sale of honey locally should result in holding prices at nearly last year's levels.

Last year many producers sold their entire crop locally by advertising in their local newspapers. Others sold their crop largely through mail orders, which were obtained by carrying small advertisements in farm papers. Others sold to peddlers who disposed of large quantities by canvassing from house to house. Roadside selling on automobile roads was never before practiced to the extent it was last season. Selling at picnics, fairs and public sales not only helps to dispose of honey but also makes new consumers. Honey should be sold to the American people in every possible way until they form the honey habit.

WHILE in many localities the honey crop is far short of what was expected earlier in the season, the United States, as a whole, has harvested a better crop than last year.

On page 533 we are publishing a part of the Government figures, which show for the United States an average yield of 30 pounds per colony as against 23.7 pounds last year, and 22.5 pounds average for the years 1916 to 1921. The reports of producers reporting for our market page indicate an average yield for these reporters of 79.8 pounds this year against an average of 44.1 pounds last year. The Government figures, of course, are tabulated from a much larger list of reporters more widely scattered than the list reporting for Gleanings. Beekeepers who have secured a good crop should not become panicky in selling, but should put forth every effort to sell to the best possible advantage. It should be remembered that last year there were large quantities of honey held over from the previous year, making the problem of marketing a discouraging one a year ago. Today the old stocks of honey are nearly cleaned up; so, even with a larger crop this year, the total amount of honey in the country is probably less than a year ago.

On the other hand, honey is moving slowly just now, probably on account of the abundance of fruit and berries in the market at the present time. However, honey will keep until the fruit and berry season has passed.

The splendid showing made in disposing of last year's honey crop, together with the hold-over from the previous year at a time when but little honey was being exported,

What Has the Harvest Been?

IT should be remembered that the federal authorities interpret the net weight law as applying to sections of comb

Stamping the Net Weight on Sections of Comb Honey. honey as well as to extracted honey put up in

containers for the retail market. Comb honey which enters interstate commerce must therefore have the net weight stamped on every section. One ounce must be deducted from the total weight for the box, in order to determine the net weight.

Comb honey which is sold in the state in which it was produced, does not come under this law but under the net weight law of that particular state. Some states do not require that the net weight be marked on each section, but permit them to be sold by the section instead of by weight, just as eggs are usually sold. Beekeepers who offer comb honey for sale should find out just what is required by the state in regard to marking the weight on the sections, in order to avoid violating the law. In our "Who's Who in Apiculture," published in the May (1922) issue, page 321, will be found a col-

unn showing those states which require that the net weight be marked on honey and those which do not. There is still some confusion in some of the states as to whether comb honey is exempt from the net weight law, on the grounds that it is a natural product, the weight not being entirely within control of the producer. Where there is any doubt beekeepers should write to the state official who is responsible for the enforcement of the net weight law.

BEEKEEPERS in the clover region of the Middle West, especially those located where

 **Weather Conditions** *siderable* and Nectar Secretion. basswood, will not soon forget the cool dry weather that prevailed during the latter half of June, which dried up the clover and cut down the secretion of nectar from basswood.

Those who have access to the daily weather maps, published by the U. S. Department of Agriculture, will find in them an interesting story of weather conditions for that period, revealing the cause of the cool weather and the drought, which was quite severe in the southern portion of the clover region.

While clover continued to yield, even when it was quite cool, the yield was greatly reduced in the northern portion of the clover belt because some days were too cold for the bees to go to the fields, and farther south the clover was dried up by the cold north winds so that in some places it quit yielding soon after the middle of June.

Basswood bloomed more profusely this season than it has for many years. In northern Indiana it began yielding on June 16, fully 10 days earlier than usual. The day was apparently perfect for nectar secretion in basswood. There was a light breeze of moisture-laden air from the south, and large amounts of nectar could be seen glistening in the blossoms. The roar of the excited bees could be heard quite a distance from the apiaries, and everything indicated an old-time basswood honey flow. The next day a strong northwest wind came spreading a cold dry atmosphere over the land. Such weather usually stops nectar secretion in basswood. This season, however, it did not stop it entirely, but of course reduced it greatly. The excitement in the apiary ceased and the bees worked about as they do in an ordinary clover honey flow. The weather map for that day shows the approaching, from the west, of an area of high atmospheric pressure which brings the cold dry air from the upper atmosphere down to the earth's surface.

Usually these high pressure areas pass by within two or three days and warmer weather sets in, but during the latter half of June there was a series of high pressure areas, one following another, so that cold dry weather prevailed most of the time.

When a few days of good "honey weather" did come later, the basswood bloom was nearly gone, but the bees certainly took advantage of the few days that were left. Perhaps farther north where basswood was later, there was a flood of basswood honey such as we in northern Indiana at one time thought we would have. The unusual series of high pressure areas during June undoubtedly reduced the honey crop in the clover belt by millions of pounds.

 **AFTER** a month of hard work in his apiaries the Editor returned to his desk early

How to Reduce *in July* **Swarming by** *what the worse* **Better Wintering.** *for wear but con-* **siderably en-**

riched by experien-

ce, as well as having the honey room well

filled with supers of fine comb honey.

One of the reasons beekeeping is so fascinating is the great variation in the seasons, each season throwing some light upon the many problems connected with honey production from a new angle so that there is always an opportunity to learn something new. Favorable weather during the spring, together with good wintering, brought on swarming before the honey flow from clover began, but swarming in May in the clover region is easily prevented by giving additional room in the form of empty combs.

Since the Editor does not make the first visit to his apiaries until the beginning of the honey flow from white and alsike clover, the bees are operated on the two-story plan, being reduced to a single story only while the comb-honey supers are on the hives. This extra story is usually sufficient to hold down swarming until the beginning of the honey flow, but this season a third story should have been given in May. For the first time during the 10 years that this plan has been used, there was some loss from swarming previous to the honey flow, because the bees were so badly crowded.

But the swarming season had practically passed by when the clover began to yield, and only a few colonies attempted to swarm during the honey flow. What a pleasure it is to produce comb honey when the bees do not attempt to swarm! The brood-chambers were examined but once to look for queen-cells, after which it became apparent that there would be no further swarming. A similar condition prevailed last year in that locality, so the Editor has enjoyed two seasons without having to fight swarming.

Both seasons the bees had gone past their peak of spring brood-rearing previous to the honey flow, instead of reaching their peak during the honey flow, so that when the honey flow began the vast army of young bees were old enough to work in the fields instead of staying in the hive. Both seasons the weather was such that the bees could work in the fields every day. When the honey flow began most of the bees were

in the fields from early in the morning until late in the evening—a condition under which the bees are not much inclined to swarm.

This suggests the possibility of greatly reducing swarming by better wintering and better spring care, so that the swarming season will have passed before the honey flow begins. In localities where the honey flow comes relatively late there is but little trouble from swarming; but, in the clover region, especially in its northern portion, the swarming season usually comes during the honey flow. If by better management the greatest emergence of young bees can be made to occur previous to the honey flow, there would certainly be less trouble from swarming. The few colonies, mentioned above, that attempted to swarm this season were behind the others in building up, so the "swarming season" for these colonies came during the honey flow. Farther north in the clover region where the bees were confined to their hives part of the time during the honey flow, reports indicate that the bees behaved quite differently as to swarming, some reporting the worst season for swarming for years. The reason for this is apparent, for, even though the swarming season proper had already passed, the congestion of the brood-chamber by field bees during an intermittent honey flow is no doubt more conducive to swarming than the congestion brought about by the emerging young bees during the period of greatest emergence. A study of the daily weather maps, published by the Department of Agriculture for June, reveals plainly where swarming was troublesome in the clover region this season and where it was not troublesome.



ONE great disadvantage in operating apiaries at a distance, so that the beekeeper is in his apiaries only

Inferior Stock Reduces Value of Comb Honey. during the honey flow, is the lack of opportunity for systematic requeening and the improvement of the stock.

It has now been several years since the Editor's apiaries were properly requeened; and it does not take long to slip backward in the quality of stock, especially for comb honey, when this important work is not done. The lack of uniformity in stock was especially noticeable this season not only in the yield, but, to a much greater degree, in the manner the sections were filled and finished. Some colonies finish the sections of honey in such a manner that they are most attractive, while others do very poor work at finishing. Some colonies fill the sections almost completely without being crowded, while others leave large pop holes at the lower corners or taper off the comb so it is light weight and not really attractive. Some colonies leave a space between the honey and the capping, giving the capping

that delicate white appearance so desirable in comb honey; while other colonies leave but little if any space between, which gives the cappings a dingy or water-soaked appearance. At the close of the season some colonies continue to finish the honey well, while others seem to anticipate the close of the honey flow by varnishing the otherwise white cappings with propolis.

The honey flow, except at the close, was of such a character this season that there was no excuse for anything but fancy comb honey, yet the grade of some honey was lowered on account of inferior stock.

The selection of stock is much more exacting for comb-honey production than for the production of extracted honey, for we must not only have hustlers in gathering and storing, but combined with this we must have good comb-builders, good finishers and as little swarming and propolizing tendency as possible.

A few weeks of time spent in selection and requeening in July and August not only insures stronger and more nearly uniform colonies next spring, but for the comb honey producer a careful selection of the breeding queen should result in an increased value of the crop of honey because of its better finish. In addition to this, the enjoyment that comes from building up and maintaining a strain of bees best suited for the production of fancy comb honey is worth all the effort when one can spare the time.



COLONIES that swarmed and lost their clipped queens just previous to the honey

flow and were prevented from the Queen Is Better a further attempt to swarm Prevent Swarming. by destroying



all but one of the queen-cells, outstripped everything else in the yards this season. In these colonies the young queens began to lay soon after the main honey flow began, so that they were in prime condition during the best part of the honey flow early in June. The few colonies that were shaken to anticipate swarming forged ahead immediately after shaking but soon dropped behind because of their decreasing numbers.

Two years ago the reverse was true in these same apiaries. That season it was the shaken swarms that outstripped all others, even those which made no attempt to swarm, while the colonies which had their queens removed gave the poorest yield; but in that case the best part of the honey flow came while the dequeened colonies were still queenless and immediately after the others were shaken, while this season the best part of the honey flow came after the young queens began to lay. With so much variation in the seasons, especially in the eastern portion of the United States, no wonder beekeepers do not agree as to which method is better.

WHEN bee-keeping reached the outyard stage it did not occur to us to bring back heavy supers and do our extracting at a home plant. Most of us rigged up a small extracting-house at the new yard and did our work there. When we had several outyards a portable outfit, constructed on either a trailer or the bed of a truck, was found to be more suitable than building extracting-houses and duplicating equipment. We soon discovered, however,

HARVESTING THE HONEY CROP

Up-to-Date Equipment and Methods Planned to Handle Large Quantities of Honey

By M. C. Richter

above reason.

The Home Plant.

The home plant should be built where it is most convenient. It should be centrally located about yards and near a town where supplies and the like may be readily procured. The central plant need not be located at a yard. Often it is more convenient to have it somewhere else. Most of us have our plants adjoining our homes, and if our dwellings are not on good beekeeping territory we can have, anyway, certain colonies such as our breeder and a few cell-builders. Our queen-breeding colonies need constant attention, and, when cells become ripe, nuclei can be brought in to take care of them. Most of us look at our bees too often. We learn to manipulate colonies less and less as we enrich ourselves through experience. The home extracting-plant fits in very well with this idea.

Taking Extracted Honey.

In the interior valleys where the weather is dry and the alfalfa flow is slow, two to three supers to the colony will handle the intake under ordinary conditions. Owing to the slow flow and the dry weather, combs may be removed while only partly capped; but when the flows are rapid and especially along coast regions where the climate is moist, an entirely different procedure must

Fig. 1.—Exterior view of extracting plant. The front room contains four 7-ton tanks and faces south permitting the sun further to ripen the honey. Back of the tank room is a storage space, and above this (upper story) is the extracting room. Truck enters garage at right to permit unloading supers into the extracting room.

that the home plant was by far the most practical. In fact it marks an important step forward in commercial beekeeping.

Outyard extracting-houses were dispensed with, owing to the extra cost of equipment, the loss through theft of equipment and honey, the fact that it is cheaper to rent than to buy outyards and hence a disinclination to build on someone else's land. Furthermore, good locations do not generally remain so for any length of time. Rentals are usually from year to year, the farmers change their crops on cultivated areas, and on natural ranges forest fires are often a menace.

The portable outfit overcame many of the above objections, but with it came new difficulties. Many yards were difficult to reach, owing to their isolated positions. Getting the trailers in and out, and setting up, and the time expended on these operations cut short very materially the actual time for extracting. Moreover, late in the season, when the days grew shorter and cooler the extracting work became more burdensome. Perhaps the greatest objection to both a portable and an outyard extracting-outfit is that the extracting is car-

ried on in the presence of the bees. Such a procedure is bound to incite robbing and lower colony morale. A home plant is justifiable if for no other than the

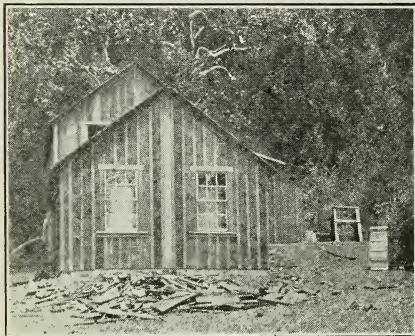


Fig. 2.—View of extracting room looking through doorway into the garage. A truckload of honey is about to be unloaded into the extracting room.

take place. A colony must have from five to seven supers in such locations. Whether few or many supers, dry or moist climate, slow or rapid flows, the taking of the honey is the same. We take off by means of bee-escapes whenever the honey is ready, and do not wait till the end of the flow. When yards average a super of extractable

honey to the colony, the full supers are placed above escapes, removed and extracted. Honey produced in interior valleys can be removed when the combs are heavy and the bees have started to cap them along the top. Frequent takes of a super of honey every 10 to 15 days throughout the season, supplying at like intervals a super of drawn comb, will result in a maximum amount of honey. It would be poor beekeeping, with a tremendous waste of honey and an unnecessary outlay of equipment, to tier up six or seven high, and then attempt to extract two or three different kinds of sealed honey

with a large quantity of ripened honey and allowed to stand for two or more months in a large ripening tank, even in a moist climate, will be found to be perfectly fit for the market.

Escapes.

It is our practice along about 4 o'clock in the afternoon to go into a yard and slip escapes under 50 to 60 supers of honey. One man can do this work in from one to two hours according to conditions. It is important to leave one, and preferably two supers, either empty or partly filled, between the escape and the brood-nest, so that the bees

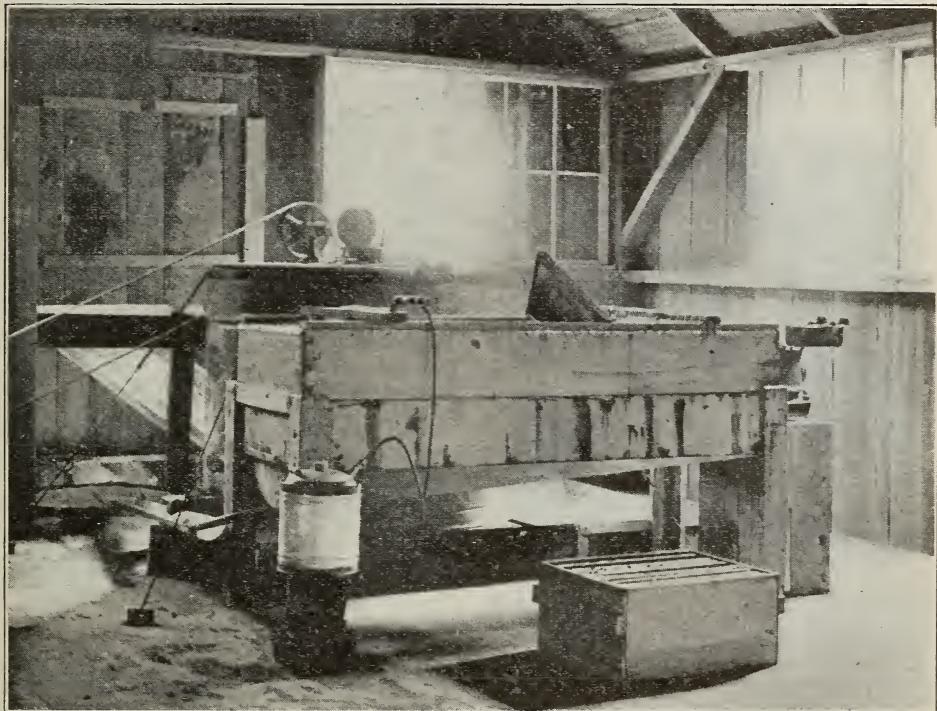


Fig. 3.—Uncapping-box with steam-heated knife at the left, and ordinary uncapping-knife in hot water at the right. After being uncapped the combs are placed in the middle of the capping-box shown where the operator of the extractor, who stands beyond the box at the right, can easily reach them. Note the outlets for honey from both the extractor and the capping-box empty the honey into an open trough, which carries it by gravity to the settling tank. The top of the settling tank is shown through the opening into the upper portion of the tank room.

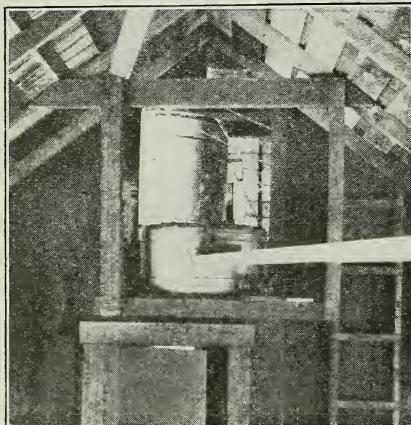
late in the fall when the season is over and robbing is severe. It is a rule with us that, whenever a super of honey is ready to extract, off it comes and an empty one is slipped in directly over the excluder. In a rapid honey flow we must tier up as high as five to seven supers above the brood-chamber. On rare occasions we have had as many as seven supers containing practically nothing but unsealed honey. At such times we take off the heaviest super and slip under the others an empty. Our first thought is to give the bees plenty of room at all times during the flow. The honey from a few supers which is not sealed, when mixed

will have somewhere to go during the evening. Some difficulty may be experienced in ridding supers from bees when the first honey is taken off, if the colonies were Demareed. Unless it is a week after all brood emerged in the upper stories, some of the younger bees may cluster with the few drones that are present. If honey is removed early in the morning, it is a simple matter to shake these few bees from the combs. Early the following morning, after the escapes were inserted, a truck calls at the yard with about as many empty supers as there are full ones to take off. If the flow is in progress the empties are slipped

underneath the other supers, otherwise, they are placed above so that they may be cleaned. Two men usually do this work, and it takes less time to take off honey in this manner than it does to put on the escapes. One hour more or less at a time, and on different days, for every ton of honey removed, certainly minimizes robbing, and is by far the best way to remove the crop. Is it not certainly better on the morale of the bees than when we extract all day long in the yard?

Loading.

The bed of our truck, which is covered with galvanized iron and with 1½-inch angle iron running around the sides and back, is built to accommodate 25 supers. When the truck leaves the plant in the morning, say with 50 supers of comb (piled two high on truck bed), it proceeds to a



View from south end of the tank room, showing the location of the settling tank below the outlet of the extractor yet high enough so that the honey flows through the open pipe from the settling tank into the 7-ton storage tanks below.

yard which is usually arranged with double rows of colonies on either side of the roadway leading through the apiary. The truck will stop at one end and unload the first two rows (20 supers), over which a canvas is thrown. It then proceeds to the other end of the yard, turns around and commences loading on the full supers, the men on their return trip taking the empties from the truck and placing them where needed. When the 50 full ones are loaded the canvas is thrown over them, and the 20 empty supers are put on the colonies from which the last honey was removed. The escapes are gathered up next, the load is roped and the truck speeds off to the plant.

The garage is part of the home plant (see Fig. 1). When the truck is inside its doors, they are closed in order to conserve warmth and render the building bee-tight. A door along the side of the garage opens into the extracting-room through which the supers

are transferred for extracting (Fig. 2). During extracting, the empty supers may be placed directly on the truck and thus avoid their being handled a second time.

Extracting-Room.

We trust that Figure 3 will give some idea of the arrangement of the extracting outfit. In the foreground directly in front of the uncapping box are placed the full supers of honey. When we are harvesting white honey we prefer a two-man uncapping box. This box is large enough to take care of the cappings of two to three tons of honey. The cappings are allowed to drain till the next extracting, when they are shoveled into a large draining tank until the end of the season when we have time to press out the balance of the honey. For darker honeys we make use of the capping-melter.

We like the 8-frame Buckeye extractor for the reasons pointed out by E. R. Root in the July (1921) Gleanings. Its chief asset in our minds is that it is a great time-saver. When we are not rushed, we utilize nearly four hours to extract one ton of honey. In this manner combs are uncapped carefully and there is time enough to extract clean, as well as mend any combs or supers that might need it. On the other hand, if we should be rushed during a heavy honey flow, which, of course, means that there are some colonies that need room, we can then extract a ton of honey in two hours with a three-man crew. Any colony, during an excellent honey flow, that is crowded for the want of storage cells, is losing perhaps pounds of honey every so many hours before the beekeeper can give it relief. We believe that it is better to uncap hurriedly and not extract clean, when we know that our bees are suffering for want of room and that we should give them instant relief.

Super-spacing is for eight frames and we do not uncap deeply until the season is over, at which time we are very finical about the way in which we trim up our combs so that they may appear all the more attractive to our young queens during the following spring.

A three-man crew during the extracting season can handle a very nice crop of honey. With ample super room, 50 tons of honey can be harvested by three fast and energetic hands. The hours of extracting, when no rush is on, are usually from nine to five o'clock. From seven to nine in the morning two men bring in the honey, while the third man tunes up the three-horsepower engine, touches up the knives, attends to the uncapping box and the like. At four in the afternoon one man puts under the escapes while the others finish extracting. The flow of honey from the extractor and the uncapping box into the settling tank, and thence into the seven-ton storage tanks, works automatically and needs no attention whatever.

Big Sur, Calif.

A LETTER which came to the office the other day told a story something like this: "Called on Mr. S. yesterday and found he had had American

foul brood in his yard of 55 colonies last spring. When he had treated the bees he carefully stored the honey in his 'bee-tight' honey-house until he could finish the pressing spring farm work. One day his sister looked out of the window, wondered what the bees were doing and discovered the whole beeyard had found the supply of infected honey in the old supers. They were busy going in through the keyhole and out through the bee-escapes on the windows, carrying the honey out and distributing it through the apiary. That evening they found the combs in the bee-house almost empty of the diseased honey and soon every one of his treated colonies was diseased."

In spite of knowing good control measures, experienced beekeepers are having many troubles similar to the story told in this letter. The persistence of disease in large apiaries is so marked and its permanent elimination so difficult that our chief inspector remarked to the writer in October, "In all my work in Wisconsin I cannot recall a single apiary which has eradicated an American foul brood infection and become entirely clean, by treating the infected colonies." At the time, I could not remind him of a successful case, but the statement was so striking that I have since gone through the inspection records to find out whether the shaking treatment is resulting in the eradication of disease.

Treatment Less Effective Than Destruction.

In four counties we have the foul brood record, since 1918, of 163 infected apiaries in which we know the control method employed by the beekeeper. Of these, 64 applied the shaking treatment while 99 destroyed their infected colonies, repeating as often as necessary. Among those who treated the diseased colonies about one-half (27) had yards free from foul brood at the 1921 inspection, showing that the others spread disease during treatment or stored infected material where the bees had access to it. Among the beekeepers who destroyed the infected colonies, only one-fourth still had disease in their yards this year. It is clear that some beekeepers are successfully eradicating disease by treating, but that others are not getting satisfactory results. In different areas there is a marked difference in the results obtained. In only one county could we say that the beekeepers have failed in their attempts to control foul brood. That is a county which insists on treating infected colonies, and judging from

THE BEE-TIGHT HONEY-HOUSE

Its Relation to American Foul Brood Control. Why Many Fail to Eradicate this Disease

By S. B. Fracker

State Entomologist of Wisconsin

the records the beemen of that county will still be "shaking bees" long after their neighbors have forgotten such disagreeable topics as bee diseases.

Why Many Fail to Eradicate Disease.

The purpose of this paper is to discuss some of the reasons that there are so many beekeepers, 59 in the counties just referred to, who treat or destroy their diseased bees but have been unable to eradicate the disease. If we were to publish this list of 59, the many familiar names would form a "who's who" of beekeeping in this part of the state. Of all those who have failed to eliminate infection in three seasons, only two own less than 10 colonies of bees and most of the yards are from 30 to 100 colonies in size. They are not careless "bee owners," but are uniformly the progressive, hard-working commercial honey-producers of whom beekeepers' associations are composed.

We all remember the details of the various treatments for American foul brood, and any beekeeper can take printed directions (if he does not know them already) and treat a colony of bees successfully. But that isn't eliminating disease from an apiary—not by many a weary season. At least the unlucky 59 will tell you it isn't.

There are only three things we forget when we fail to control foul brood and none of them is given in the printed directions:

First, the appetite of the bee.

Second, the size of the bee.

Third, the size of the germ which causes American foul brood and which lives indefinitely in honey from a diseased colony.

All three are "first reader" facts in apiculture; but several thousand commercial beekeepers may well be uneasy about their 1922 profits, because they neglected these three little facts in 1919 and 1920 and 1921. Treating the infected colony is only the first step toward eliminating disease. To illustrate:

Not long ago an inspector went to look into a case in which repeated treating had not succeeded in freeing the apiary from disease. After talking things over with the owner, they went into the honey-house where it was admitted a large supply of honey and comb from infected colonies was sometimes stored. As usual the beekeeper was sure his honey-house was tight, although he was unable to explain the presence of so many bees. A careful search revealed the fact that the bees were making regular trips between the apiary and the honey-house, entering through a crack in the cement floor and leaving whenever the door was opened.

Are Honey-houses Ever Bee-tight?

Not long ago an old German beekeeper was observed sitting motionless on an empty hive, eyeing his bee-house closely while puffing at his pipe. When there appeared to be no sign of life in his figure, a friend came up and inquired what he was thinking about. It developed that the building was full of bees and he was trying to see how they were getting in. The storage room had arrangements for heating, and it was later discovered that the stovepipe offered so large an entrance that a good-sized honey crop could all have been removed by the bees in a short time if they had found as convenient an exit.

In some cases there is a missing window pane in the bee-house or a half-inch crack in the siding. Even if the building itself is tight, enough bees can come in with the proprietor, as he carries supplies back and forth, to cause all sorts of trouble. The placing of a few bee-escapes in the corners of the windows is a common arrangement and a good one in the absence of disease.

In the office we have a proverb which is the basis of one of the ten commandments of foul brood control. It is, "There is no bee-tight honey-house." Even if we should equip one with a vestibule, arranged so the inner door could not be opened unless the outer one was closed, we should probably neglect an entrance somewhere else, large enough to admit a cat, to say nothing of a few bees.

The storage of infected material in the honey-house is one of the largest factors in maintaining diseased yards. It provides a source of continuous infection as serious as keeping the carcass of a cholera-killed hog in the barn, or tying a mad dog with a string. As long as diseased honey exists anywhere, it is a menace to every apiary within reach.

Permitting old comb, on which colonies have died, to remain outdoors for months is another common form of criminal carelessness. Sometimes the owners are members of beekeepers' societies, readers of bee journals, so experienced in bee-disease control that they had treated infected colonies annually for from five to thirty years! This past summer inspectors have cleaned up four such cases, including hundreds of hives and thousands of frames and extracting-combs. Every week the rain would soak up a few scales of American foul brood in the old comb, and a few stray bees, attracted by the odor, would carry a few bacilli to a formerly healthy colony. Every year some neighbor would try to "keep a hive of bees or two" and would soon give it up "because they didn't do well."

It would be interesting to take a vote of the readers of this paper and ask, "How many have infected material stored in a 'bee-tight' honey-house?" "How many have fragments of old comb in the old weathered hives behind the barn?" "How many, last August, had hives containing

infected comb piled in the woodshed, standing bee-tight until Johnny came in one day and pushed over the pile?"

If we want to reduce taxes, as we all do, let us first cut off the toll we are paying to the foul brood germ, *Bacillus larvae*. Twenty-seven commercial beekeepers have stopped the payment of that tax in Wisconsin counties by carefully treating the bees and destroying infected material. Forty-seven have accomplished the same result by destroying both infected bees and material. But 59 real honey producers are still paying that same tax in those same counties because of the points that are forgotten when treatment is applied, namely (1) that bees like infected honey if they can reach it; (2) that they can crawl through a space a quarter of an inch across; or (3) that the cause of disease is a germ which may be lurking in the most microscopic drops of honey.

The Area Clean-up Plan in Wisconsin.

Just a word in conclusion in the way of a progress report. The spotted, one-county area campaigns are beginning to take a coherent form, and the entire eastern part of the state from Milwaukee and Madison to upper Michigan, except Ozaukee and Washington counties, is now being covered. Six counties in this area seem to have no American foul brood at the present time and five more have only an occasional colony showing disease. In the remainder, where losses from American foul brood approached the nature of a conflagration three years ago, the problem in all but one or two counties has reduced itself to one of discovering and putting out the remaining sparks.

Eradicating the last cases is proving a difficult task. When only one colony in two hundred is infected, locating and cleaning it up without causing new infections require careful work. The beekeepers everywhere are giving excellent support—particularly the one-colony "bee owners"—and the unpleasant reception inspectors used to meet from irate housewives has become a rare occurrence.

In Fond du Lac and Dodge counties work was begun this year and plenty of infections (472 colonies) found. In Dodge County two-thirds of all the inspected yards showed American foul brood. Neither county was completely covered even once, but the survey will be finished next season.

The older clean-up areas are still showing a few cases of disease but they are destroyed as fast as discovered. In Jefferson County such was the fate this year of three per cent of the colonies inspected. Some other counties showed the following percentages: Langlade 2½%, Sheboygan 5%, Marathon 3/5%, Milwaukee 4%, Winnebago 3%.

In all the counties named only the infected parts were surveyed and the percentages would be much lower if we included all the bees in the county. Over 10% of the colonies in the vicinity of Madison and

Stoughton are still diseased, but less than 2% of the total number in the county.

Of course, the last traces of disease will be hard to find and will require persistence to eradicate. But with the energetic work

of the honey producers American foul brood is sure to become more and more uncommon, and I do not believe it is too much to say that it may eventually disappear.

Madison, Wis.

ASERIOUS objection to the production of comb or section honey is the amount of labor required properly to prepare it for market. We may extract our honey and let the bits of wax rise to the top of the tanks, draw it off into five-gallon cans, place them in cases, nail the lids on the cases, and the crop is ready for market. It is quite another thing with comb honey.

It should be looked over, soon after it is taken off, to see there are no cells of pollen or brood as will sometimes happen, for worms very often develop about such cells and make a dirty mess. We aim to look it over and clean off propolis soon after it is taken off, before worms have had a chance to get in their work.

Some of my beekeeping friends spread all their section honey on shelves or under a

PACKING COMB HONEY

Every Step in the Care of Comb Honey from the Hive to the Market

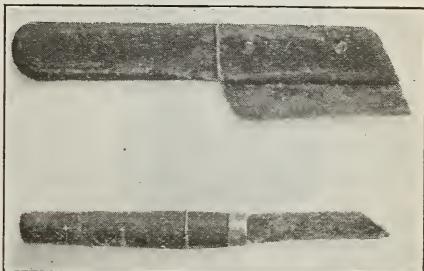
By J. E. Crane

Scraping Propolis from Sections.

Freeing sections of propolis is quite a task when a large amount of comb honey is produced, and especially so in some

sections. We find it much worse in some yards than in others only a few miles away.

To clean sections of propolis in a close room full of flies, with the thermometer at



Knives suitable for scraping sections are difficult to find. These have blades about $2\frac{1}{2}$ inches long, straight edges with ends tapered to a sharp point.

85° , and the propolis sticking to the scraping knife, hands, clothes, chair and the floor, is no very pleasant job.

We cannot always get rid of the heat, but an electric fan will relieve us of much discomfort, and all windows should be screened to keep out the flies. Paper laid over the floor will save it from most of the propolis that would otherwise stick to it. A comfortable chair to sit in will prevent excessive weariness.

A Convenient Scraping Table.

A table just right, and made on purpose for this business, is a great help. It should be high enough to come just above the knees as one sits in the chair. The table I use is two feet wide and three feet and three inches long. Four-inch boards nailed to the sides help to keep the propolis on the table. Two cleats, $\frac{1}{8}$ by $\frac{1}{8}$ inch, nailed on top of the table for the supers to rest on and keep them above the propolis on the table, are very useful. An apron is attached at each end of the table so two persons can work, one end of the apron being attached to the end of the table and the other end hav-



A handy table for scraping sections. Note the convenient height for ease in working and the aprons attached to the ends, which keep the propolis from the operator's clothes.

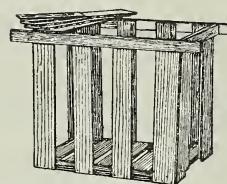
roof or in an especially warm room, for the honey to ripen, but we have found a dry chamber to answer very well. If any worms start, place in a close vessel and with it a teaspoonful or more of carbon disulphide and they will give us no more trouble.

ing a loop to go over the neck and hold the apron over the lap and breast.

Special Knife for Scraping.

A good knife is a most important tool but somewhat difficult to find. It should be of the best steel, the edge straight, the blade about two and one-half inches long, with the end tapered to a sharp angle. Since I find it difficult to buy just what I want, I sometimes have taken an old steel case knife and broken the blade to the right length, then beveled down the end on an emery wheel. An old file is very useful in keeping the knife sharp, for it must be kept sharp to do the best work. It is important to have a shallow dish of machine oil with which to oil the scraping knife frequently as we work. A person who has not used it will

these cartons in shipping cases, just two dozen in a case. Our honey will appear at a great disadvantage in a first-class grocery store, unless it is covered to keep out dust and flies.



Shipping case filled with sections of honey without cartons. When cartons are used it is not necessary to use glass in the shipping cases.



Sealed cartons make a sanitary package for sections of comb honey. Fancy comb honey is worthy of a good package.

be surprised to see how it helps to keep his knife and hands free of propolis in hot weather, and relieve one of the most disagreeable features of cleaning honey. If sections are very badly glued up on top of the super, we scrape them off with a heavy knife or hive-scraper, before taking out the sections.

We use plain sections, i. e., all sides the same width. I find it requires an hour to clean 100 sections, or, to be exact, an average of 96 an hour, but most help will not do nearly so many.

Weighing and Grading the Sections.

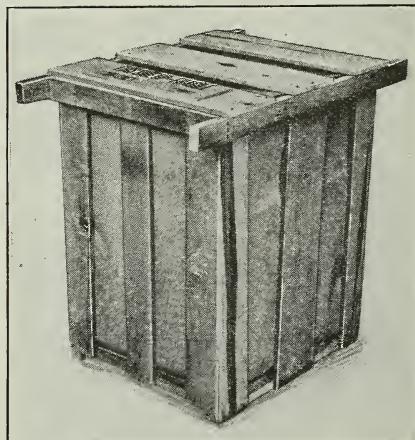
Some persons weigh their sections as they clean them and place them at once in shipping cases. We prefer to clean our supers of propolis as we remove the sections, and return the sections to the clean supers and then weigh and sort them later. As we weigh them we place each weight by itself, so that all the sections in a case will be of the same weight. We think it right to ask more for a case of sections where each one weighs 14 ounces net than for a case where the sections weigh only 12 ounces.

Each Section Is Placed in a Carton.

Our work is not yet done. We must place each section in a nicely printed carton and

Cases Must Be Packed in Carriers.

One thing more. We have found that freight and express matter is handled so roughly in the last few years that it is wise to crate comb honey when shipped in less than carload lots. In fact, many railroads make crating comb honey a condition for receiving it. Consequently crates must be made for all our fine cases of honey, which adds much to the work of producing comb honey for market.



Crate or carrier for eight cases of comb honey. The carrier is deep enough for an inch cushion of straw in the bottom. The lining of paper keeps the cases clean. The handles suggest to freight-handlers that the crate should be carried, not dumped, and a warning in large letters stenciled on top tells of the fragile contents.

When we add to this the extra work and expense of buying sections and foundation and getting them ready to place on the hives, it is evident that comb honey should sell for one and one-half or even two times as much as extracted honey in order to pay for all the extra work and expense in producing it.

IN writing up on this subject I shall confine myself to that zone which embraces the Inter-mountain states, and shall not advise any particular mechanical mode for harvesting the crop, as almost every producer has his own way of taking his crop, after he has produced it. In almost all this region, we are confronted with conditions, not theories, as to how to produce the most honey.

Long Building-Up Period and Long Honey Flow.

As a rule, we have a longer period in which to prepare for the honey flow than the middle West or the eastern states, and also a longer honey flow, after it once starts. Most of our honey comes after the honey flow has ceased in the above-mentioned sections.

As a rule, our bees build up very rapidly in early spring, during which period a certain per cent of colonies will swarm and brood-rearing is carried on to the limit; then frequently we have a lean spell, that checks swarming and brood-rearing, and is a very anxious time for the beeman, for he knows that bees produced in May and the fore part of June will not be with him when his August honey flow comes. He also realizes that, if his working force is not kept up, much of the yield from the first alfalfa bloom must be used in getting his brood reserves in condition for the August honey flow.

Usually the best colonies have stored a surplus during fruit, dandelion and willow bloom, that can be used by the less-favored ones to keep them breeding, and which also uses up this amber honey and keeps it from becoming mixed with the first extracting of white honey.

Swarming Ceases When Main Honey Flow Begins.

When the main honey flow starts, swarm-

ALFALFA HONEY PRODUCTION

Some Basic Principles in Beekeeping in the Alfalfa Region of the West

By M. A. Gill

ing will cease if ample room is given, for there is no condition that checks swarming like a heavy honey flow. All colonies which were at their zenith

when the main honey flow starts, will deteriorate somewhat during a long honey flow; while those colonies that were on the ascending scale will cast a few August swarms, or at least try to do so. But this is a condition that pleases the beekeeper, for he knows that he is securing a good crop of honey.

Another condition different from those in the lower altitudes of the East is that we cannot pile up our surplus on the bees and leave it until the close of the harvest, for it is next to an impossibility to extract honey that is left on the hives all through July and August.

Management During Heavy Honey Flow.

I feel confident that, during what is known as an unusual secretion of nectar, much honey is lost, especially in out-apiaries by the beekeeper not knowing just what his bees are doing. This can be avoided by having a colony on the scales at the home yard; then if the scales indicate from ten to twenty pounds per day, something must be done quickly by the bee master, either by extracting or giving more room.

In a business of several hundred colonies the bee master cannot afford to lose a mental grasp of his situation by joining the extracting crew, for this can be done by less experienced men and nothing should be left undone that will produce a pound of honey, for now is the accepted time. We can produce honey only when it is coming from the field. At such times some men spend considerable time trying to get their weak colonies to producing. This is commendable if there will be a later honey flow, but sufficient unto the day is the evil thereof, and it is only the colonies



Class of vocational men taking course in beekeeping. M. A. Gill, instructor, at right. Photograph taken at the Utah Agricultural College apiary.

that are prepared that can take advantage of the conditions above mentioned. We have kept our bees a whole year waiting for these conditions, and while the reserves (the brood) are quite necessary, this particular battle is won only by the bees that are ready to go over the top.

Last year a colony on the scales at my home yard gathered fifty pounds in three days after their honey was extracted, and it was nothing more than a representative one among two hundred. I lost much honey at an apiary four miles out, that was equally well situated, because I was unable to empty them or give more combs during this short and sweet flow.

Having been a comb-honey producer exclusively until recent years I have not been properly equipped for the production of ex-

tracted honey I have noticed that comb-honey bees, as a rule, winter much better than those used to produce extracted honey. So I make it a rule to anticipate the close of the honey flow a few days, and strip off all supers. This gives the bees a chance to arrange their winter nest and fill up the same as do comb-honey colonies, and avoids all robbing, as is often the case when the last extracting comes after frost or when the honey flow has stopped.

Wintering in Two Stories.

I wintered one pack in two-story hives the past winter, and they seemed to have wintered better than in single-story hives. They were clustered in the top story this spring; but, as little heat is lost downward they have not the brood now that the hives



M. A. Gill's home apiary of 240 colonies.

tracted honey, but I am building an extracting outfit equipped with a power extractor and shall arrange to have the honey run by gravity from the extractor to a three-ton horizontal tank. In going from the extractor to the tank it will run over a hot plate heated by electricity with de-layers so timed and graduated that the heat will not discolor the honey in the least, but will cause it to remain liquid longer. Is there any better way to do this?

Strip Off Supers Before Honey Flow Ceases.

In the production of extracted honey I notice that some men keep the extractor going just as long as there is any honey coming in. These, if they do any feeding at all, try to fit the colony for winter by hanging in a comb or two of honey. This, I think, is a mistake. As a producer of both

wintered in single stories have which were given a second story when needed.

I think this proves the great benefit of the tiering-up system that bees follow the heat in brood-rearing.

It is not so much the size of the hive as it is the seasonal conditions and the manipulations that prevent swarming and that secure the greatest amount of honey. I want to remind the large-hive advocates that some 36 years ago a man by the name of Spencer (as I remember) produced 1020 pounds of extracted honey, the product of one queen from a ten-story eight-frame hive, and I do not recall when the yield has been exceeded.

The alfalfa weevil has disappeared in this locality, and we have had the heaviest June flow within the past six years.

Hyrum, Utah.



QUEEN INTRODUCTION

Two Little Kinks that Should Save the Lives of Many Queens in Introducing

Someone, I think it was Doolittle, gave us a sure way of queen introduction. His method was to take several frames of capped brood, brush off all bees, put the frames into a hive, close the entrance and carry it into the house or somewhere that the temperature might be right. Then the queen is to be turned loose on the frames of brood, the cover placed on the hive and left for four or five days. It was then to be put outside if the robbers were not too bad, and an entrance large enough for one bee to pass was given. If this is carefully done it is a very sure method, the principal feature that condemns it being the time and work it entails.

Someone, I do not know whom, thought to improve upon this method and recommended that the combs of capped brood be set over a strong colony, with a wire screen between the hive-bodies, that the queen and brood might have the benefit of the warmth of the colony below. Now instead of improving upon the first method, he completely ruined it; for, if the combs of emerging bees are put over a colony, it is one of the poorest of all methods of queen introduction. I confess I am puzzled to know what makes the queen die when put in this upper story, but a large percentage of queens die for some secret reason of their own or are killed by the bees on the other side of the screen. It does not seem possible that bees can sting through the wire screen; but my assistants, who nail up the queen cages, frequently get their fingers stung through the wire screen. This last season I had seven different parties write me, stating that they lost queens when they were placed above the screen as has been recommended. I have advised that they carry the hive into the house instead of putting it over another colony, and no loss has been reported.

Dr. Miller gave us the newspaper method of uniting bees, and it works to perfection, with never a bee killed. A number of years ago I thought to improve upon this, and I had a number of screens made to fit the hives, and set the queenless hive on top. I was greatly surprised upon looking at them next day to see from one-fourth to one-half of the bees dead in the upper story. What killed them was a puzzle. No doubt the same thing that caused the death of the bees causes the death of queens when introduced above the screen.

Kink No. 2.

When you take out the frames of brood to remove the old queen before introducing

the new one, be sure to put the frames back into the hive in the same order in which you found them or you will lose some queens. This applies to any method of introducing a queen to a full colony. Now if you do not do this let us see what happens. You put the frames back any old way and you put a frame of honey in the center of brood-nest and leave frames with brood in all stages on both sides of this frame of honey. Before the queen is released the bees start queen-cells on the frames on both sides of the comb of honey. When the queen is released, she never dreams that any one has been monkeying with the brood-nest and supposes it is in one part, the same as any well-behaved bees would have it. She takes a swing around the circle and orders all queen-cells to be destroyed. But she never surmises that there is another brood-nest the other side of that comb of honey, and goes on laying. Sooner or later a young queen emerges from a queen-cell on the other side of that comb of honey, and the first thing our nice laying queen knows she sees a virgin come over the top, which means her finish. It does not always happen thus, but I have lost many queens in this way before I found out the reason. Sometimes the queen would be laying for a week before the virgin could kill her. Many queens that are purchased are lost from this cause. Sometimes a beekeeper will be puzzled to know why the queen was superseded (?) soon after she began to lay. She was not superseded, she was killed. In removing frames from the hive, it is a good plan to take out the frame nearest you and set it down beside the hive. Then as you examine the others, put them back in the same place you found them. When through, put the frame that you first removed back in the place nearest you.

Jay Smith.

Vincennes, Ind.



CAPPING - MELTER AND BOILER

How to Provide Plenty of Steam for Extracting Purposes

The following letter and my reply may be of interest to some of the readers of Gleanings:

Dear Friend:—I read in Gleanings for July, 1921, your description of the capping-melter you use, and thought it came the nearest to what I wanted of anything I had seen yet.

I understand you have a box 18 inches wide, 4 feet long and 11 inches deep, with one end open. Do the melted wax and honey run out all across this open end, or have you a spout at a certain place? Do you tilt the whole box or just the bottom? What is the proper angle so as to have it run off quickly enough?

What shape is your 10-gallon boiler, and what material is it made of? Is it necessary to have

FROM THE FIELD OF EXPERIENCE

a safety valve on it? You speak of heating it on a Perfection water heater. Is this the same as the ordinary Perfection oil stove used for cooking, etc.?

Now that you have used the outfit for some time, have you any suggestions of improvement as to size or anything? I want room for two to uncaps at once. Where do you place your combs that are uncapped while waiting for one batch to go through the extractor? I have used one end of my uncapping box for this.

I will be very thankful to you if you will give me the information, and hope it will not be taking too much of your time. Wm. G. Anglin.

Brewer's Mills, Ont., June 1, 1922.

"Dear Mr. Anglin:—I shall answer your questions seriatus. The wax and honey do not run out all across the end of the melter, but the metal is folded up, leaving an outlet of three or four inches wide. This must be open so a scraper can be used to clear out what has not fully melted. One secret of success in rendering cappings without injury to the honey is to get it away from the heat before it is fully liquefied. That is why it is undesirable to attempt to get commercial cakes of wax from the melter, as it is not necessary to heat it to that extent to separate the honey. All the capping-melter is for is to separate the honey. Then the wax is remelted in the winter to clarify it.

"The box is built with the legs all equal length; then, in use, an inch block is placed under each leg. Sometimes two-inch blocks are used. You soon find the necessary height.

"The ten-gallon boiler is the same shape as the 30-gallon boiler used for heating water for the bathroom from a water front in range or furnace. It is galvanized iron and is tested for some 200 pounds pressure, I am told. It might be wise to have a safety valve, and a glass water gauge is an absolute necessity.

"The New Perfection water heater is made by the same people that make the oil stove, but is made specially for heating bathroom water during the summer when the furnace or range is not in use. After using it one year I thought I had discovered a serious fault in the heating element which comes directly over the fire becoming choked with scale from the hard water, and there seems no way of cleaning it as the parts are solid castings with no provision for cleaning out the heating flanges. Last fall we undertook to melt wax with the steam from this by turning the steam directly into the melter containing old combs and water. It boiled away all right for the first day; but when the fire was turned out at night the boiler, as it cooled, sucked wax and slumgum back into the "works" and choked everything up. This was what we might have expected had we given it any thought, but it seems as though we have to try some things "once." After a lot of fuss we got the system circulating again and, of course, did not try the wax again; but this spring it choked again, and the plumber reported it

was choked with scale. Since then we have discovered it was only some more slumgum, which had lodged somewhere for a time and then got out where it would stop circulation. This has been cleared, and we are hoping our troubles are at an end. It is very handy for hot water, but for melting the cappings from 5000 pounds per day we found it a little slow and are installing a six-horsepower steam boiler. I mean a *real* boiler, and hope to have comfort in extracting, melting wax, making feed and so on. Incidentally we are installing a steam engine to run the extractors. But that is another story on which we hope to have a report later.

"The melter is plenty large enough for two to work and place the combs on one end, as you suggest. That is the way we do."

Georgetown, Ont. Morley Pettit.

ICE CREAM CONES FOR HONEY

Novel Way of Selling Honey at Fairs. An Effective Method of Advertising

Suggestions for advertising honey are always in order, and, as it is nearly time for the county fairs, a little stunt we pulled off here last fall should be of interest.

In connection with our apiary exhibit at the fair we sold what we called "honey cones." We took the small-sized ice cream cones, and with a piece of broken section placed therein from an ounce and a half to two ounces of candied honey, and sold them at five cents. It is surprising how the kids will lick them up and come back for more. Also many of the grown-ups have a sweet tooth and will try them out. A piece of section makes a very satisfactory spoon, as it is flat and will easily scrape the honey off on the edge of the cone. The more solid the honey is, the better, and you quickly become expert in gauging the amount for each cone.

If you have a good "barker" you can simply sell the cones at your exhibit, at the same time telling the people the advantages of candied honey, or you can have them peddled through the crowd.

This is one way of advertising and making the people pay for it, along the same line that the late Elbert Hubbard used to advertise Roycroft wares on his lecture trips. You are selling your honey at 40 cents a pound, and at the same time calling the attention of the people to honey and increasing the home demand many times.

There is no reason why some one with enterprise and push should not sell honey cones in every holiday crowd. They should also be advertised at soda fountains and lunch counters.

G. H. Buffum.

Sheridan, Wyo.

FROM THE FIELD OF EXPERIENCE

NOVEL WAY OF TAKING HONEY

Getting Away with Load of Honey in Early Morning Before Robbers are Abroad

No robbing whatever, with its furious stinging, its annoyance to neighbors, its loss or injury to colonies, need be experienced, if our plan is followed, for taking combs of honey from the bees for extracting during a very light honey flow, or after the flow is over.

We load the truck or trailer, one or the other, with supers of empty comb, if there is to be a later honey flow, and leave home early so as to arrive at the apiary and have our smokers going in fine order "at the first peep of dawn." One jerks out combs of honey and stands them on end around the hive and leaning against it, or against each other, touching at upper end only, so as not to crush bees. Helpers follow as closely as possible, shaking and brushing the bees from the combs, placing them in supers and on the truck or trailer. One spends part of his time in putting supers of empty combs on the hives, in place of those removed, if there may be a later honey flow.

By this plan, just as the bees begin to fly freely, we have the canvas tied over the load, and are on our way. The bees are not nearly so cross as when the honey is removed during their working hours. Peace reigns in the apiary, neighbors are not so often annoyed by cross bees, and the bees are left free from the robbing mania which results from taking honey by the usual methods during a dearth or a poor flow.

It was claimed by the Pettits, years ago, that combs of honey, covered with bees, could be quickly set out of the hive, then picked up and brushed, with far less stinging than when brushed at once on taking from the super—and there is some truth in the claim; but, if the "jerker" gets far ahead of the "brushers," the bees on the combs may become very cross.

Mr. Goodrich of Fresno, Calif., before beginning to extract an apiary, contracts all entrances, so that only one or two bees can leave or enter at a time. He says that then, even though it is robbing time, robbing does not make much headway; for if a super of wet combs is put on a colony and hundreds of robbers are on those combs before the hive can be covered, it then takes the robbers so long to find their way out through the contracted entrance away down at the bottom, that when they do escape they are no longer a menace and cannot well enter again.

Very extensive beekeepers have told me that they controlled robbing at extracting time, by setting out a few stacks of supers with empty combs from the extractor, a little distance from the apiary, to attract the robbers, and repeating this as needed: but

with our apiaries, this is ineffectual, as I fully believe that any number of such supers of wet combs, short of ten to the colony, only suffices to stir up the bees the more; in fact the entire apiary seems to give up all other activity, to indulge in robbing.

"The peep of dawn plan" may solve some of your troubles as it has solved some of ours.

E. F. Atwater.

Meridian, Idaho.

SPIDERS TO CONTROL WAX MOTH

Combs Stored in Open Hive-Bodies Safe When Guarded by Spiders

Seven or eight years ago J. L. Byer of Canada told, in an article, of leaving his empty extracting-combs piled up outdoors, trusting the spiders to protect them from the wax worms. The idea seemed to attract but little attention, except that a few beekeepers poked a little fun at Mr. Byer.

I thought the plan seemed reasonable, so I tried it and have now for six or seven years trusted entirely to the spiders to protect all empty combs up until time to put on the surplus boxes, and all not in use are left right outdoors the season through in care of the spiders.

The seasons of 1917 and 1918 were failures and I had about 75 hive-bodies full of combs outside, summer and winter, and I have not lost even one brood-comb or extracting-comb while piled out in this way.

I let them have a good freezing and put them out early enough to be sure the spiders beat the moths to them.

They are piled six or seven high with a tight bottom-board and cover, then "staggered" in two places, leaving about an inch opening at the front and back as a convenient entrance for the spiders. Later this makes a handy opening for the moth, and I am sure that in every instance she will be "meat" for the spiders.

I have a few times piled up extracting-combs in this way after harvest and have not yet lost a single comb, leaving 90 bodies out last fall, and a long hot fall at that. They were left entirely uncovered, were soon well stocked with spiders and not a comb was damaged.

Combs set out this way after extracting, I watch closely to make sure the spiders beat the moths to them, as I have not tried the plan long enough to feel perfectly safe.

If combs were piled out this way and left spider-tight, I am sure they would be ruined, as the moth would lay eggs in the cracks of the hives and the worms would crawl in.

I don't know whether the moth lays eggs in these cracks when the hive-bodies are staggered to leave openings; but if they do,

FROM THE FIELD OF EXPERIENCE

then the spiders will catch worms as well as moths, for not a worm ever gets in. I have always believed that when the moth found such an easy entrance she used it in preference to a crack, and met a hearty reception from a spider.

Audubon, Iowa.

E. M. Cole.

[This plan for protection against damage by larvae of the wax moth has been suggested from time to time, having been advocated by Langstroth many years ago. Those who try out the plan should keep close watch to be sure that the moths do not get a start, for if there are not enough spiders present there would be great danger of the moth larvae making quick work of the destruction of the combs. It is well to remember, in this connection, that moths are less destructive if the combs are spaced wide apart in the hive-bodies and exposed to the light, for the moth larvae prefer darkness.

—Editor.]

ONLY THE NET WEIGHT WILL DO

Officials Object to Marking Minimum Weight Lower than Actual Weight

Our good friend Crane writes in January Gleanings of marking the actual net weight in ounces upon each section, whereas he holds that the U. S. law is satisfied with the minimum weight idea. Mr. Crane's arguments are based upon common sense and justice; but it is easier first to say, "not less than 12 oz.," or "minimum weight 12 oz.," than to mark 12, 13, 14, or 15 oz. on each, as the case might be. We thought so at any rate and followed the practice for a season, when we were taken to task by the departments of weights and measures of Massachusetts and New York for violation of the established laws. We were told that no such thing as "minimum weight" or "not less than" would do. In fact, nothing would do but the actual net weight, allowing a leeway both ways. In other words, a section weighing $12\frac{1}{2}$ oz. might be marked 12 oz. or 13 oz. (Our practice is to mark it 12 oz.) A section weighing $12\frac{3}{4}$ oz. might be marked 13 oz., etc. We were not prosecuted or fined on account of our violating the law, but we have been careful that we did not get caught again.

It is not a great hardship thus to mark the sections; we found we did not have to weigh each one; for after a little practice we were able to tell by the feeling in which class a section belonged; and to guard against possible mistakes we would occasionally place one upon the little postal scales standing on the worktable by our side. This requires but a moment's time. This grading according to the weight is being done while we are cleaning our sections from propolis; then we are ready to arrange

them in our shipping cases or carton them first, if that is to be done.

The shipping cases are marked only with the kind of honey they contain, clover, buckwheat, or what not, and the number of ounces each box therein weighs—thus, clover, 12 oz.; or buckwheat, 14 oz.; amber, 15 oz., etc. We have abstained from using the word fancy or No. 1 or No. 2. When a case is marked 15 or 16 oz. it might be supposed that that was fancy; whereas, if 10 oz. appeared thereon, that was equal to a No. 2 or worse. This course has been satisfactory to us and the purchasers.

If sections are to be cartoned, each section should either first be marked with the number of ounces and with the initials or name of the producer before it goes into the carton, or else the carton should be sealed and the weight stamped on the carton.

Naples, N. Y.

F. Greiner.

TREATMENT OR DESTRUCTION

American Foul Brood Can be Eliminated from the Apiary by Careful Treatment

I should appreciate your making a slight correction to the article entitled "Comb Lovers and Fire Worshippers," published in the June issue, pages 379-380. Mr. McMurry in writing the article was depending on memory in his statement that "we have not a single case on record where a beekeeper, even the best of them, has been able to eliminate American foul brood from his yard by the shaking method." While the point Mr. McMurry wishes to make is correct, that the results from destruction were more satisfactory than those of treatment, the statement itself gives a wrong impression. In fact, we have 27 cases on record in the office in which in four counties during the past three years, beekeepers have succeeded in eliminating American foul brood completely from their yards by treating the bees instead of destroying them. It is unquestionably possible to clean up disease in this way. The fact that it is not done oftener is due to the economical tendencies of certain beekeepers, revealed in the fact that they apply treatment instead of destroying their colonies. The difference is in the state of mind rather than in the impossibility of success by using the ordinary methods of treatment. We have found that, whenever a beekeeper undertakes to eliminate American foul brood but tries to save the maximum possible amount of equipment and bees, he is sure to save something which is infected. For this reason the percentage of successful cures is less than when the beekeeper approaches the problem from the standpoint of eliminating every possible or conceivable source of infection.

Madison, Wis.

S. B. Fracker.

THE first item in the index of the July number of *Gleanings* is "Honey Markets," in which we are all interested. The markets, of course, at this season are dull; but what especially interested me was that the honey producers in a large majority of cases report a honey flow and a crop of 100 per cent or over, compared with average years. There is something exhilarating in the thought that beekeepers, as a rule, are going to be well repaid for their labor.

* * *

Grace Allen says on page 452 that it pays to clip queens. She is right, as a rule; but, under some circumstances, bees can be cared for with little difficulty without this little ceremony, though we prefer clipping.

* * *

That certainly is a wonderful story on page 435, by E. R. Root, of a single colony of bees giving 550 sections of comb honey. It shows what is possible; and while most of us will fall far short of securing such results, it shows the path by which we may achieve the greatest success.

* * *

The method of making new colonies at the close of the clover season, as described in an editorial on page 433, is all right if you have combs and young queens and a late flow of honey; but, if you lack these essentials, beware. I tried it once, using queen-cells and virgins for queens. It did not prove altogether a success.

* * *

That robber cloth, described by S. E. Miller on page 447, is one of those little articles of great value while handling bees, especially in early spring or late summer or whenever bees are inclined to rob. These cloths are so simply and cheaply made that anyone capable of keeping bees can make them.

* * *

That is a right good article on "Migration Beekeeping," by M. C. Richter, commencing on page 436. While we here in the East have little occasion for this method of beekeeping, there are some things to learn from those who practice it. Among other things he says, "A journey always seems to stimulate the bees to greater field activity. I was told when I first began keeping bees that moving bees from one place or town to another would increase their productiveness. I wonder how much there is in it.

* * *

E. W. Powell illustrates on page 448 a method of preventing a thin top-bar from sagging. I began using $\frac{3}{4}$ -inch top bars, but found them to sag badly, and of late have

made $\frac{7}{8}$ -inch bars. As I handle these frames over, the question comes to me again and again, why take up so much of the best space in the hive, space that is easily kept warm for the rearing of brood or storage of honey, space enough to rear several thousand worker bees? It seems to me that one of the advantages of the wood-base foundation is a thin top-bar that would not sag.

* * *

On page 464 Mr. Demuth describes how to tell when the honey flow is closing, one of the most important things for an extensive beekeeper to know, and yet often one of the most difficult things to foretell. If we misjudge and set the time too soon, we may lose considerable honey for lack of room in which to store it. If we set the time too far ahead, we may find ourselves with hundreds or even thousands of unfinished sections too light to sell. These must be extracted, the best sorted out and saved for next year, while many will be so glued up and soiled that we prefer to throw them out and buy new ones for next year.

* * *

We have been told many times that all signs fail in a dry time, and it appears to be true. It may look ever so much like rain, but the clouds break and pass with little or no rain. It is just as true that all signs fail in a wet time. The clouds may break, the wind change, the sky clear; but before we are aware, the clouds gather again and it pours. We have had here in Vermont more than three times the normal precipitation—in fact, nearly 10 inches of rain in the month of June, more than is recorded for any one month in the last 100 years. What is true of the weather is true of the bees or the "control of swarming." Rules that usually work in a very satisfactory way are of little value in other years and under other circumstances. The present year is such that we cannot depend on rules that work well in ordinary seasons. We have been accustomed to feel that swarming is over when we have shaken the bees on to dry combs; but this year many colonies will quickly fill such hives with brood and honey, start queen-cells and are ready to swarm again. Again, we may remove an old queen, cut out queen-cells and introduce a virgin queen, and, as soon as she is laying, we expect swarming is over. But this year a young queen will, in many cases, fill all available room with brood, and queen-cells are started and again there is swarming. So we find it necessary to clip their wings to keep them at home. Well! It is a swarming year, and often necessary to repeat reproductive measures to keep our bees on their job.

WHEN I have permitted myself to think of the approach of old age I have always dreaded it as a time of life which, though peaceful, would probably be devoid of thrills. If that is true, then I am still young in spite of a dozen gray hairs and the record in the family Bible. For few thrills have surpassed the one which came to me when the head of the family displayed the keys to our new home and said the former owners had at last departed and left us in possession. And unlike most thrills this one persisted and even grew when we unlocked the front door and went on an unconducted tour of exploration through living room, dining room, kitchen, screen porch, hall, three bedrooms, six ample clothes closets, cleaner closet, linen closet, large un-Californian attic and nice little basement, not forgetting the two shady porches and entrance terrace. And we positively gloated over the fruit trees, an apricot, a nectarine, a peach, half a dozen orange trees, 12 grapevines and 80 blossoming rose bushes. Having left plenty of fruit, flowers and shade in our old home we did not want to wait years for the same comforts in our new one.

Laugh at us, if you like, you people to whom a change of residence is a common, if uncomfortable, incident, but remember we have had just one home in our married life of 24 years, and we had it all that time, and giving it up was a most painful operation with no anaesthetic. We thought we had always appreciated the word "home," but being homeless for five months made us feel it to be the most beautiful and comprehensive word in the English language.

In these days, when we see instead of read much of our news in the pictorial section of newspapers and magazines and at motion pictures, an article seems uninteresting and old-fashioned when it is not illustrated. For that reason I am showing a couple of snap shots of our "Little Gray Home in the West." (The song of that name has long been a favorite with the head of the family, and it is a curious coincidence that when our choice narrowed down to four or five houses they all happened to be gray, although we had not considered them for that reason.) This is a very pale gray, just off white, with white trim and green shingles and shutters. One picture shows the front, facing east, and a part of the side including the little pergola which extends south from the front porch. The other shows a view from the southwest including the rose garden, behind the white fence, and the lattice enclosed pergola which covers the porch at the west of the house. That is where my Corona and I are writing this, and since the picture was taken the grapevines have

Our "Little Gray Home in the West."

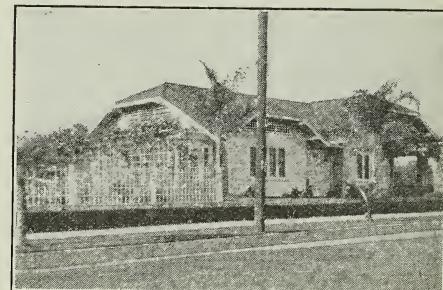
CONSTANCE ROOT BOYDEN
(Stancy Puerden)

grown so luxuriantly that the porch is shady practically all day.

When we were househunting, real estate agents and others told us porches were

little used in this climate, that they were apt to be too warm during the day and altogether too cool for comfort in the evening, both of which statements have proved to be erroneous in the case of the fresh air loving Boydens. It is true that the interior of the house is rather more comfortable in the early afternoon, on very warm days; but during the mornings, late afternoons and many evenings the porches have been delightful. We have already eaten Sunday evening lunch on the porch under the grapevines, and although it was dark enough to need the lights we did not find it too cool.

Another comfort with which we would be most unwilling to part is the 30-inch overhang to the roof. Keeping the direct rays of the sun from the glass of the windows



during the middle of the day insures a much cooler house, for the summer sun is undeniably hot in California. In the winter when the rays of the sun are needed for warmth and cheer they will strike the south windows owing to the lower position of the sun in the sky. All of the west windows are shaded by the grapevines in the summer, but when the leaves fall in the winter those windows too will be "sun-kissed."

OUR living room, a little over 14 feet by 23 has four French doors opening on to the porch at the end, four casement windows, a wide solid front door flanked by sidelights which are screened and will open, on the east side and casement windows above the bookcases on either side of the fireplace to the north. While this insures an abundance of light and air it does not leave much wall space for pictures, but we find the changing views through the windows more to our taste than any pictures we could buy. I wish I could show you one of my favorites through a north window. A

rose bush, climbing up outside, festoons itself over the top of the window and when the casement is opened the blossoms peep in; beyond there is a vista through a long, green aisle of the orange grove with just a glimpse of a pretty home at the other end, and in the distance on clear days a view of the blue mountains.

After showing you that view I would like to have you turn and look at a brown basket of roses on my little brown sewing table by another window. There are creamy buds with hearts of gold, tawny buds deepening to a reddish copper at the heart, blossoms of a flaming salmon rose color, blood-red roses and large single roses with petals of apricot pink shading to buff at the center and set off by glossy foliage tipped with autumn red. And the roses are as beautiful and varied in shape as in color, with petals of exquisite texture. It is remarkable that the rose bushes, after their extravagance of bloom all the spring, should have enough vitality left to furnish these beauties in July.

THIS first California summer is teaching us many things about irrigation. We are learning that velvety green lawns, roses and other flowers, fruit trees and even palms must be irrigated regularly and thoroughly. We inherited a Japanese gardener from the former owner of the place, who explained that it would be much easier to hang on to him than to coax him back if we let him go, and being ignorant of conditions here we decided it might be cheaper in the end to keep him for a month or two. He is supposed to take care of our place along with a number of others and to work when and how he pleases. We were quite puzzled to discover that at times he looked like a boy of twenty who came to his work on a bicycle, and again he seemed to be a middle-aged man who arrived in a Ford bringing several fancy sorts of lawn mowers and other tools. We figured it out that the younger man sublet part of the work to the older one, and about that time a third appeared and we think a fourth has worked here. We finally decided that an oriental syndicate is taking care of our little place.

The lawn is watered by an automatic sprinkler system. Our first Sunday morning I was awakened before five by a sound as if a hose had started into sudden activity, and by the time I had regained all my senses my clothing on a chair near a window was sprinkled plenty damp enough to iron, my white shoes were slowly filling and water was dripping from the window sills and running down the wall paper to the hard-wood floors. When the man of the house was persuaded to investigate, one of the syndicate affably waved a greeting and resumed his occupation of sitting on the brick terrace and meditating while the automatic sprinklers efficiently irrigated. Since then, some two or three times a week, when I hear the sound of artificial rain about day-

light I leap out of bed and close our four windows to the south and then go on and close windows in the other bedrooms, for I doubt if the rest of the family would waken if they were half drowned. Fortunately the porch to the west shelters the four French doors on that side of our bedroom, so we do not have to finish the night without air, but the porch furniture received its share of irrigation. Whether the Nippon gentlemen love to rise at dawn or are taking advantage of the time when the water pressure is strongest we do not know, nor are we likely to ascertain from them, for apparently they do not understand English. We have been told they wilfully misunderstand in order to have their own way. We Boydens do not know anything about the Japanese question. We only know that the results of the syndicate's work on our place are good, but whether we can afford to continue such help we shall know better after writing checks for the water bills.



But it is a keen joy to a garden lover to see things grow in this irrigated, sunblessed country. The former owner of our place evidently did not care to grow vegetables, for the nearest approach to a vegetable was a tiny mint bed around a hydrant. One of my first acts was to set out a few tomato plants, and how they have grown, although I have had to irrigate them myself, for the syndicate does not include them when it digs nice little trenches around the roses and other flowers and turns water into them. A little parsley bed will be started next, and then, if I can persuade the syndicate or an American gentleman related to myself to spade up a little piece of idle ground, there will be Swiss chard and string beans. In this delightful, mellow soil of the San Gabriel valley I believe I could use a spading fork myself, but it might establish a bad precedent. Next year we hope to start rhubarb and asparagus, and a strawberry bed will displace some of the syndicate's chrysanthemums and cosmos.

DO people today, sideline bee-keepers, for instance, keep diaries and "journals"? Last winter, while reading the "Life and Letters" of George Eliot, I was constantly amazed at the journal she kept. The entries which appeared in the book ranged from long detailed accounts of their travels on the continent, the things they saw and the people they met, to the briefest of single memoranda, such as "Wrote the last word of 'Adam Bede' and sent to Mr. Langford. *Jubilate*,"—or "Declined the American proposition, which was to write a story of twelve parts in the New York Century for £1200."

This particular sideline beekeeper does not keep any journal. If she had done so in the early summer of this year, she might one evening, in verbose mood, have written something to this effect.

This was the day Mrs. S. was to take lunch with me. She understands from past experience that lunch with me means a very simple affair, as I cannot, if the mornings are to be spent as planned, spend much time preparing dainty fixin's. Why should women do so much of that, anyhow? Do we prove the friendliness of our spirits, or their worthwhileness, by the variety or rareness of our menus? Yesterday, when in town, I bought—yes, bought—some chicken salad; this morning I made a mayonnaise dressing and a simple quick little sour cream cake; prepared the lettuce and the strawberries, telephoned my nice friendly neighbor for some whipping cream; and dusted up my house. I was to meet Mrs. S. at the Park Station and drive her over. It had been my intention to have the little blue and gray table in the breakfast room all set before I left, but somehow other things made me too late—driving into town with A. A., running over to the beeyard, catching a lost baby rabbit and giving him to the little boy cherry pickers—such things, you know. However, everything was crisply ready in the icebox, and it would take only a few minutes to set it out.

Just as I was about to hurry into company clothes to go whirling over to the station, the telephone rang. Over the wire came the pleasant even tones of a beloved friend living about a mile away. Now these dear friends had one hive of bees sitting in their orchard, a hive left quite to its own devices. And this morning this sweet voice was telling me that the bees were swarming; they had no hive and didn't know what to do—could I come over and help? "I can't," I regretted, "Mrs. S. is coming to lunch and I ought to be on the way to the station this minute." After hanging up, I reconsidered and called back. "If you'll have someone

Beekeeping as a Side Line

Grace Allen

head off Mrs. S., so she won't walk all the way over here in the hot sun, I'll run to the yard and get a hive and go on over in my house dress and hive your swarm before lunch." So over to the yard I dashed in the faithful Ford, assembled a hive and dashed back, past the little brown bungalow, over to Granny White Pike. There sat Mrs. M., lying in wait for Mrs. S. Together we sped over to the station where the patient lunch guest still waited. We explained as we went, and soon were driving in through the beautiful grassy wooded acres that make the approach to Mrs. M.'s lovely home—and on around the house to the orchard.

And there hung two swarms!—one medium-sized one hanging like a convenient brown pear from an apple tree, and one large long one strung out most inconveniently along a thick large limb of a peach tree. I tackled that one first, it was so much larger and more important; but it was troublesome, as such swarms are. Two negro men leaned on their hoes in the garden, two colored women watched through screened windows. Mrs. M. and Mrs. S. stood to one side, loyally offering to help, while Jock, the Airedale pup, waited in the car. Someone brought a ladder, someone found a basket. After much climbing up and down, much shaking and brushing and waiting and perspiring, I got most of the bees in the basket and dumped them down in front of the hive. "There," I said, "that's one."

Then I went to the apple tree. This one will be easy, I told myself. One quick jerk landed them in the basket; from which, however, they instantly rose, and then flew over to the other tree and began draping themselves along that same may-I-say-pesky-branch that had so recently been the scene of my struggle with the first swarm! Waiting again till they were well clustered—if you can call that sort of thing a cluster—I repeated previous manœuvres, and after much brushing got them. And then—spilled them! From the top of the ladder to the ground! Basket and all, crash! Sheer awkwardness, that, hot and hurried awkwardness. At that moment Mrs. M.'s fine and friendly voice came floating across to my dripping dismay, where I sat on the ground and laughed. "Lunch is all ready," she said; "you are both my guests." And in we actually went, my silk-clad guest and I in my blue gingham, and ate lunch with Mrs. M. in her large cool dining room.

After lunch, the appletree-peachtree-spilled-out swarm being again strung out along the stout peach branch, I again sealed the ladder. At the first touch, they took to wing and were off over the barn lot to no one knows where. Can you blame them? The

children, home from school by that time, went running off after them, but they soon lost sight of them and of course will never see them again.

"Well, we have one of them," comforted Mrs. M., and she took us out to see her flower garden. There, a little later, I heard bees. And hurrying to the orchard fence, discovered the hived swarm calmly leaving their new home and actually going over into the old one, the parent hive! It sounds incredible, but it happened. We all saw it. And I took my beehive and my company and went home.

Yes, assuredly I would have written this into my journal last May, if I'd had one. For while the countless times that one hives swarms successfully and without incident, all according to Hoyle, are interesting to experience, yet it is these other times when everything goes witchy, that are so funny to remember.

There really are two sequels to this tale. One could not have been written into the diary until a few days later. For then Mrs. M. telephoned that the bees had swarmed again and Mrs. M. was coming after the hive, while the eleven-year-old boy was trying to get the bees. She described the cluster, we decided on sawing off the branch, and he hived them successfully. You're a better man than I was, William M.

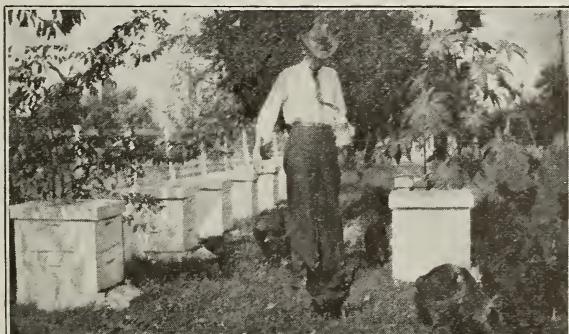
The other sequel was what Mrs. S. and I did the rest of the day. When we finally reached home, instead of going in, we walked back along the elderberry bushes; climbed the old rail fence where wild roses were just passing out of bloom; crossed patches of pink stonecrop, resting a moment on flat rocks in the thick of it to count the bees on the blossoms; picked our way on stepping-stones over the little wet weather branch; climbed the rock wall; and made our way up the gentle ridge to the dead finger-pointing oak that marks our rear boundary. It was after climbing the wall that we heard bees. "They are working on something here," I said; "let's see what." We started looking. We looked; and we looked; and we looked. Over here, we decided; no, over here, we reversed the decision; or no, it sounds loudest down there. Strong and steady was the humming; but for all our searching, we found no bees. So we gave it up and gathered daisies instead. Then we sat down on the warm sparse grass, with

Jock at our feet, and talked about life.

One day, some two or three weeks later, I heard Mr. Allen call to me, from down by the rail fence. "Come on out here," he urged; "and bring my hat." When I joined him, what was he doing but trying to locate humming bees! With Jock at his heels and a quart of cherries—or what was left of them—in his hand! He had first heard the sound, he said, when up near the house, and had wandered down to locate it. But he had not been able to find anything. So we tried it together. But with no better results than on that other day when I lunched my lunch guest at my neighbor's. It is still the mystery of our little ridge.

How happily sideline beekeeping combines with other outdoor home activities. People who live "half in the country, half in the town," and who therefore have plenty of yard space, are the ones who oftenest find a few hives of bees an attractive, interesting and perhaps profitable addition to the home grounds. How well they combine

with both vegetable and flower gardens. How charmingly flowers and shrubs, smooth green grass and young trees harmonize with well-kept white-painted beehives. While the homely look of a flock of fine chickens is made even homier and more alluring by half a dozen or more



Bees, flowers, vegetables and chickens make a combination which broadens the interest of the owner, adds to his health, to the variety of his table and to his bank account.

beehives by the fence. For quite without question, the hives add to the artistry of the owner's surroundings, as well as to the broadening of his interests; to his health as well as to the variety of his table; and perhaps even to his bank account. Yet to the real bee lover that last item is usually a matter of minor importance. Even as he does not ask his tramps through woods to bring him pocket money, nor his tennis or golf to make him a bondholder, so, of his bees, their true lover asks first, and chiefly, for the charm and beauty of their setting and the delight and wonder of their ways.

THE SILENCES.

The silences came creeping near
My penny-trumpet day,
And I stood very still to hear
Whatever they might say.

The things they said were holy things,
And when they slipped away,
A tented wonder, like great wings,
Was all about my day.



FROM NORTH, EAST, WEST AND SOUTH



In Southern California.—The honey of southern California is nearly enough gathered so that one can judge pretty well as to the size of the crop. The orange was a short crop, as only a few sections produced enough orange honey to pay to leave the bees near the groves. The black sage was yielding at the same time, so a number of beekeepers moved their bees, either just before or during the blooming period, from the orange to the sage ranges. The sages have yielded very well. The buckwheat is doing nicely and will give a good surplus. All in all, it is a far better crop than 1921, but will scarcely come up to the record crop of 1920.

We might cite an unusual case, showing the great value of knowing the business and having your bees up and ready for the honey flow. Two apiaries were located on an orange range, so near to each other that it was almost possible to throw a stone from the one to the other. One apiary produced 40 pounds per colony, while the other produced 160 pounds per colony. It seems to be more necessary to have the bees in good condition for an early and rapid flow such as the orange produces, but may well be heeded in any honey district.

Many beekeepers have been adding modern appliances to their equipment the last few years. One of these is a pressure tank, to assist the feed of gasoline in the stoves so much used in the heating of knives and in the capping-melters used throughout southern California and the West. Some use the common plumber's pressure tank that he uses in connection with his fire pot. Others have one made that holds one or two gallons of gasoline. Many have no means of registering the amount of pressure put in them. An ordinary way is to have a valve stem from an automobile tire soldered in and the pressure put in by an ordinary tire pump. While using one of these appliances in their extracting-house near Perris recently, Messrs. Rough and Hardy had the misfortune to have their tank explode. The explosion was evidently caused by the flow of gasoline being retarded by some obstruction, so that the stove was not burning satisfactorily. Mr. Rough was pumping more air in at the time of the explosion and must have had too high a pressure. Gasoline was thrown over both of the men, and the outfit took fire. The extracting-wagon and a latest model eight-frame extractor, together with the balance of their equipment and a number of colonies of bees, were entirely destroyed. Mr. Rough was so severely burned that he died a few days later, and Mr. Hardy is just out after two weeks spent in the hospital. If beekeepers want to use this appliance, it seems but reasonable that they should have a way of ascertaining how much pressure there is in the tank. We have found that a very satisfactory way is

to add one, two or more feet to the height of the gasoline tank on the stove.

“Beckeeping next to nature” might describe the equipment of a Palo Verde apiarist, whom we met a few days ago. His story reads like this: “I need a man with some capital to help me develop a good business, where we can run from 800 to 1000 colonies. Many of my hives are sitting on the ground, with no bottom-board and a gunny sack laid over for a cover. I have no money to buy equipment and cannot develop my business as it should be.” When a man can run bees without a bottom-board or cover, he is certainly to be congratulated, so far as economy is concerned at least. But this is a great country and, if you tell a man a thing cannot be done, some Yankee will come along and do it.

Prices do not seem to be established with any degree of regularity. Most beekeepers are hoping to get an average price of not less than 10 cents per pound. In fact, the cost of production is so great now that it will be necessary to get a good price if any profit is made.

Weather conditions have been all that the southern California beekeeper could ask for. Mild days, with nights not too cool, have prevailed up to the present time, with the exception of about 10 very warm days. However, these days were not hot enough to injure the honey plants to any extent.

Corona, Calif.

L. L. Andrews.

* * *

In New York.—Frequent torrential rains with cool nights and warm days have been the weather conditions during June, with a very intermittent honey flow from clover. Where colonies were strong and supplied with drawn combs a very satisfactory crop has been stored; but, where bees have been operated for comb honey, much swarming and very little surplus honey has been the result, due to the cold nights preventing the comb-builders from breaking into small clusters to build comb in section boxes and the rainy weather keeping the working force at home a great deal of time breeding discontent in the brood-chamber. Today (July 8) basswood is in full bloom and is yielding freely, although there is but little left in these parts.

Peas, oats, tomatoes, corn, etc., were damaged nearly 50% by the heavy rains, and many fields are being worked up and sown to buckwheat. Fall honey plants are in fine condition; as is also new clover seeding, which promises well for another season.

Brood-rearing has been heavy throughout the spring and summer. Many queens are now passing their height of prolificness, and requeening during August will be even more advisable this year than usual.

Ransomville, N. Y.

H. M. Myers.



In Ontario.—Ontario has a great profusion of clover bloom this year—at least this is the case in all five counties where we have bees, and from what I can learn, I believe the conditions are much the same in that respect over much of the province. Heavy rains have thoroughly soaked the ground, and clover is lasting a longer period than usual. In our section, we have had only about one day out of three that bees could work owing to wet cool weather, but when the days are fine nectar comes in nicely. While I have had few reports from other places, a fair crop of honey is now assured at our three apiary centers, and the quality appears to be very fine. There is no buckwheat grown in Wentworth and Haldimand counties, and very little in north Simeon where our bees are located, but here in the home section we have a very large acreage this year. In years past when clover failed, fields of buckwheat coming on looked fine to our eyes, but this season, with wet weather holding the clover season back and at the same time hustling the buckwheat on, things are different. It looks as though it will be almost impossible to get all of the clover honey off the hives before buckwheat comes on, as the two honey flows will overlap. However it is better, I suppose, to have some mixed buckwheat and clover honey than to have none of any kind, so we will not worry, but do the best we can and let some of the clover go as buckwheat.

Old honey seems to be all cleaned up, and, although we have made a few sales, the honey is about all on hives yet at this date (July 8). We have had quite a few inquiries in a wholesale way. Sugar is firming all the time, and is hard to get in quantities here at present, grocers tell me. That at least should help the honey market a little. Agricultural prospects are good all over the Dominion, and that, more than anything else, is a favorable factor in the matter of helping sales of honey, particularly so in the case of the western provinces where crop failures have been unpleasantly frequent during the past few years.

It is pleasing to all beekeepers, I believe, that steps have been taken by both the U. S. and Canadian authorities to prevent importations of live bees from Europe, owing to the danger of bringing over the Isle of Wight disease. Only a short time ago I had a letter from a beekeeper in England, who claimed that what we called paralysis here was nothing but Isle of Wight disease.

If that is the case (I do not think it is), we might feel safe in the thought that this disease, dreaded as it is in England, would never be a serious menace here, since the few isolated cases of paralysis (so-called) never have, so far, proven infectious nor contagious as far as I could see. Last year we had three distinct cases, and they were

all over 80 miles from each other. Colonies actually died right out in two cases, and yet other colonies alongside were not affected. One colony in the home section got sick in buckwheat bloom and the bees were piled up in front of hive by thousands, very few getting over two feet from the hive entrance before dying. They exhibited the usual symptoms, shiny in appearance and bloated, their bodies being filled with a light-colored fluid.

Although these colonies were much decimated in numbers, they wintered well and early in spring appeared all right. A fine Italian queen headed the colony, and I was surprised to find the same old clipped queen present this spring. I thought they might have superseded her last fall. About May 1 they again got sick and, although I have re-queened the colony, the adult bees are still dying in such numbers that the stench from their dead bodies is noticeable as one goes past the hive. I would give quite a little to know just what causes this malady.

Markham, Ont. J. L. Byer.

* * *

In Michigan.—August could well be the busiest month of the year. The white honey flow ceases in late July or early August, and, as the dark honey flow follows very closely, the entire white crop must be immediately removed from the hives or its value will be reduced by dark honey being mixed with it.

I have noticed when supers were piled high at this season, with cool damp nights, that fermentation starts in many supers, if not removed to the honey-house; and even there, they must not remain long, but should be extracted and sealed in tin cans or other tight containers within a short time.

The honey-selling season starts at this time. This is especially true of the comb honey, which must be cleaned, graded and eased and a part placed on the market.

The colonies are very strong now and must be given room, or a large proportion would swarm out.

This is an ideal time to make one's increase artificially, and every strong colony should make one. Here is the plan that I have used successfully for several seasons: Immediately after the white honey is taken off, a hive-body with ten combs is placed on each hive, and, just as the dark honey flow starts, the increase is made by setting off the super of combs on a bottom-board and closing the entrance to about three inches. Then after removing the old colony to a new location, place this newly made colony on the old stand and introduce a young laying queen at once.

The dividing of the colony and the introduction of the queen are best done just before dark; for, if the division is done early in the day or even in early afternoon, by



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nightfall there would be few bees left in many hives unless the cage containing the new queen to be introduced is placed among or above the combs. The queen may be introduced in any of the good ways, but I have had the best results when using the tobacco-smoke method, which is quickly done with no bad results. I have never killed a queen or worker by this method, and I believe it is perfectly harmless. I get from 90% to 100% safely introduced. I proceed as follows: I have a good fire in the smoker and then place in a good quantity of strong tobacco. With a good volume of smoke I give five or six puffs in the entrance, and in about one minute or so I release the queen at the entrance and follow her up with a puff of smoke. If introducing a number of queens, I smoke six or eight colonies and follow up immediately with the releasing of the queens.

It is well to remember that colonies will rob now, and that the entrances should be reduced except in very strong colonies.

If one gets the honey off and extracted or, if comb honey, cleaned and eased, the increase made and properly cared for, the sales of honey nicely started, and the old worn-out queens and even many that did excellent work this year replaced with young vigorous ones, he will be busy enough.

The other fellow will compete with you for sales; but rather than cut below the established price, unless that price is held beyond its proportional value with other goods, prepare your product just a little more nicely and neatly and give just a little better service, and you will be both surprised and pleased with the final results.

East Jordan, Mich. Ira D. Bartlett.

* * *

In Texas.—The month of June has brought much disappointment to the beekeepers. Cold periods, rains and floods have put an end to any hope for a honey crop in southwest Texas. The drought of last fall cut off hope of a horsemint flow. The rains ruined the huajilla and mesquite, and now the only hope for a honey crop in Texas is cotton. In some small isolated sections a fair crop from horsemint and marigold is reported. At the present time the bees are just making a living, and unless a very favorable fall bloom occurs wholesale feeding must be resorted to.

The summer meeting of the State Beekeepers' Association will be held during the Farmers' Short Course at College Station on July 25 and 26. The program will be very interesting, as many of the speakers are old as beekeepers in Texas but new as speakers before the association. Last year the auto caravan trip was started, and this year most of those attending will come

with one of the many caravans headed toward College Station.

The migration of plants is a very interesting and little-understood subject. Just what conditions start it and bring it to an end are yet to be learned, but it is safe to say that very favorable weather conditions and the breaking up of the old plant growth due to farming activities are the main factors. Most beekeepers recall the migrations of the dog fennel, Canadian lettuce, Russian thistle and buffalo burs. Of particular interest to the Texas beekeepers is the migration of the Texas marigold (*Guillardia pulchella*). Less than 20 years ago this plant was noted as a honey plant in north Texas. Today it is the main plant that builds up the bees to a strength to care for the cotton flow. About five years ago this plant came into notice in southwest Texas, and this year it had increased in numbers. to where, despite the cold and rains, it gave some surplus.

It seems to be one of the provisions of nature, that the weather conditions favorable to one plant are not to another. Thus the plants do not come into competition, and bees do not starve. This spring when huajilla was blighted by the rain, guayacan (*Guaiacum angustifolium*) gave a good surplus, and now, when everything else has failed, brazil (*Condalia obovata*) is furnishing a living for the bees.

It seems that everyone has something to say about catalepsy in queens. I hardly like to think of Her Royal Majesty having fits or stumping her toes, and believe this peculiar action is related to the "death faint" or playing possum which is very common throughout the whole insect world.

San Antonio, Tex.

H. B. Parks.

* * *

In Pennsylvania.—Slow honey flow, lots of swarms and little surplus honey make up most of the reports from Pennsylvania beekeepers so far. This condition is found in all of the demonstration meetings in various parts of the state. The average surplus of white honey to date is not over 10 pounds per colony. Two frosts in June in the mountainous districts and alternate cold and warm spells all over the state have interfered seriously with nectar secretion. In spite of these conditions we find an occasional beekeeper with a small but satisfactory surplus. Management, or lack of management, more than the season is the greatest factor after all.

The great factors in honey production are in turn the factors that prevent the bad conditions so prevalent at present. In our extension work we are teaching frequent re-queening, more food for winter and spring, more brood-rearing room, especially for


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spring, and more hive insulation than is usually given. The beekeeper who gives each colony a young Italian queen about August 1, provides 50 or 60 pounds of honey, insulates his hives well and has 10 to 14 combs for brood-rearing through April and May, is always ready for a bumper crop in the good season and will harvest a fair crop in the poorest season. Those who practice this system are harvesting a fair honey crop even this year.

Matters of greatest interest throughout the state seem to be American foul brood and transferring bees from box hives into modern hives. Control of the former depends much upon the general practice of the latter in many sections. Many of our demonstrations are on these subjects. The method mostly used is to drive the bees up into a modern hive equipped with full sheets of foundation and a queen-excluder placed between the two for a period of 21 days.

American foul brood is often found in bee-trees, and thousand of colonies live in the woods of this state. Some have raised the question regarding the advisability of transferring the farmers' bees in order to control American foul brood when so much of it exists in the woods. This is a serious question and can only be met in one way. The farmer beekeeper must practice such methods as to prevent the wholesale loss of swarms going to the woods every year. If no swarms escaped, in a very few years almost all of the bees in the woods would be dead. The remaining bee-trees could be cut down by beekeepers in the vicinity.

This fact must be emphasized, the average beekeeper must positively change his methods or rapidly lose out. Most of the bees in the state are kept by farmers or other side liners.

Geo. H. Rea.

State College, Pa.

* * *

In Northwestern Indiana.—Apparently there will be about an average crop of honey in northwestern Indiana. Plenty of rain up to May 24 gave the clover a good start, but since that time there has been no rainfall except a few local showers. Two weeks ago it appeared that the clover crop would be cut short owing to drought; but basswood has helped out, and this, with the heavy flow from fruit bloom in May, will give us about the average for this time of year. In the vicinity of the Kankakee and Calumet rivers, half or more of the surplus is usually secured in August and September, heartsease and goldenrod being the predominant sources.

Prices probably will be low, owing to large crops reported elsewhere and to the enormous yield of berries and other fruits. Unless producers can co-operate in securing effective organization for marketing, in-

volving a better scheme of advertising, it would seem that many will be obliged to reduce output or to discontinue production.

Valparaiso, Ind.

E. S. Miller.

* * *

In Wisconsin.—From willow bloom in the spring right through to the clover flow the weather was favorable and the bees were stimulated from natural sources. Breeding was continuous without any interruption. In our 20-frame hives the colonies became very strong. The clover flow came fine on June 5, and with it came a flood of rain that caused much property damage. From then on during June up to July 5 the honey flow was all cut to pieces by all extremes of weather, there being a day or two at a time for bees to work and several days of weather that would keep the bees at home.

By the end of June swarming was in order, even with our large hives. Up to the present time (July 5) 12% of all colonies swarmed. Less than 4% were natural prime swarms; that is, they swarmed when the first cells were sealed. A few colonies showed plainly that they were supersEDURE swarms with virgin queens. Six per cent were swarms where the swarm came out with the old queen, and several cells were in the hive with young queens just ready to emerge. Many times the queens would emerge while we were removing the cells from the combs. We think most of these may also be classed as supersEDURE swarms. But there were some that were a puzzle, judging from all the evidence. We think that the keeping of the bees at home and idle half of the time caused a crowded condition in the brood-chamber, even with plenty of super-room. The bees decided to swarm (?), but kept right on working when the weather was better later, and seemingly forgot about the cells until it was too late to destroy them; then, when the cells were ripe, they just had to do something and swarmed at the last minute before the young queens emerged.

With seven years' use of the large hive, we have found that many colonies will start queen-cells, and later destroy them of their own accord if the weather is good with a good honey flow on. This year the unfavorable weather all came in with the honey flow. Eighty per cent of our queens were two years old this season. It was practically impossible to do much requeening last year in August, on account of the drought at that time. Robber bees are respected by us, and at the same time we might say there is nothing we dislike so much in our business as a robber bee.

We find it unnatural and unwise to try to do any requeening in August in our location, with nothing for the bees to work on. We do this much, though a little at a time—we

make nuclei during the honey flow and give them cells that were grafted from larvae of our best colonies. When these young queens are laying we introduce them with cages to such colonies as most need the replacing of old and poor queens. We do no more of this than we can and get away with it without starting robbing.

Our policy now is, "Never kill a queen, when there is no honey flow, unless you can replace her with a laying queen at once." The robbing spirit may be kept down with the policy that an ounce of prevention is worth a pound of cure. We think American foul brood is spread more in this way than in any other way. With us the month of August is mostly occupied with extracting honey and a little requeening.

Greenville, Wis. Edw. Hassinger, Jr.

* * *

In Georgia.—This season has been rather peculiar in that local conditions in this immediate region varied so greatly in localities not far apart and similar in general conditions. The honey crop seems to have been pretty good over a large part of the Coastal Plain region, but in some places it was too dry and in others too wet at a critical time in the honey flow. In some localities of this nature, a too rapid change from dry to very wet, and again to dry weather, was not conducive to a very good yield of honey. In this locality, the earliest honey plants did not yield the bees quite enough for breeding purposes; but, as they generally had abundant stores from last year, they were ready for the main honey flow from tupelo gum and gallberry, which came into bloom at nearly the same time and yielded fairly well for about a month. Those were followed by the bloom of summer titi and saw palmetto and large fields of cantaloupes, which were yielding a moderate surplus until a very wet spell of weather suddenly set in when, for some weeks, the bees drew heavily on their stores until the weather became settled again. They are now doing fairly well on cotton and a weed, lately introduced, called "Mexican clover," or "Florida Purslane," which resembles neither a clover nor purslane but is botanically known as *Richardia scabra*. This plant is spreading rapidly in this region and yields a light-colored honey of good quality, rather superior to cotton or velvet-brown honey. The nectar from the latter is due to be coming in soon, and more of it than that from any other late summer plant. If weather conditions were always favorable there would be practically a continuous flow of honey in this region from about March 15 until November. If the people could see the folly of so much burning of vegetable matter in woods and fields, thus impoverishing the soil as well as destroying much valuable bee pasturage, both the agri-

cultural and apicultural interests of this section would be enhanced.

The honey produced in this immediate section is generally sold in a retail and jobbing way and, being of good quality, sells rapidly enough so that the crop is disposed of some time before the new crop comes in. Consequently the market is never badly glutted and prices remain quite firm in normal times.

T. W. Livingston.

Norman Park, Ga.

* * *

In Porto Rico.—The coffee plant or shrub plays a very important part in the honey yields of Porto Rico. Not that coffee in itself yields heavily; but, being a rather delicate shrub, it cannot withstand the direct rays of the sun, which are broken by the large trees grown for shade. These trees are all leguminous, and are heavy yielders of nectar, given the blossoms and proper weather conditions.

The northern beekeeper located here frequently runs into the old canard of bees injuring fruit or, to localize it, coffee. I have talked with natives who make the claim that the bees are destroying the coffee industry of the Island. One would think the educated classes would know better, but they do not appear to. Coffee-growers themselves, as a class, claim that the bee in gathering the nectar from the blossoms injures the flower so that no fruit is produced.

An article two columns long published lately in one of the leading papers of the Island, the "El Mundo," has a vicious attack on the honeybee along these lines. The writer claims that not only the blossoms are ruined by the bees but that all pollen is stolen by them. This prevents the blossoms from being fertilized, and further that in stealing the nectar from the blossoms the setting seed is robbed of this nectar (food) which it needs for the first few days of its existence.

I am sure the scientific world would take note of the unusual ideas of the writer of this article, who is too modest to put his name to the end of it. No doubt we should all like to have some idea of the foundation he has for his rather original view-point on the needs of the coffee berry.

From all I can glean in reading on fertilization, the flowers which need the insects for pollination are those which yield nectar, whose pollen is sticky or viscid and whose blossoms are more or less brilliant. All this applies to the coffee blossom, which is a pretty star-like flower, white in color and an inch or more across.

The Island has been receiving a fair rainfall, which should stimulate the production of blossoms in the near future. Also it has been unusually warm for this time of year.

The south coast is bone-dry. Cattle are starving, and all the grass has been burnt up by the extremely dry weather there.

There is a little honey being gathered in the hill districts. Coffee has been blooming, and this is stimulating to the colonies. Never in my experience of the Island have I seen the hives so bare of honey up to June first as they have been this year.

Aibonito, Porto Rico. Penn G. Snyder.

* * *

In Iowa.—Up to this date (July 3) the flow has been up to normal in this locality. In fact one might say above normal if we get rain soon. The fields are in many instances white with clover yet, but the stems are getting short, though yielding lots of honey to this date. However, unless we get a shower within the next few days it will soon be dropping off. It has held its own exceptionally well on account of the ground having an abundance of moisture prior to the flow. Many of the colonies have filled three full-depth bodies and are still bringing it in.

Swarming has not been so hard to control this season as at other times with the same flow. Our queens have had the run of two hive-bodies all spring until June 15, when we commenced putting them below the excluder, and with the exception of a few 1921 queens that were crowded for room to lay, and some colonies that were superseding, we should have but few swarms. These old queens should have gone out of the yard last season, but on account of the poor flow we let them go and so did the bees; consequently we had some failing queens. These old queens are the cause of many swarms. The moral is, requeen all colonies having queens that are liable to fail next spring.

Dr. Miller always left that part to the bees, and considered that they attended to it at the proper time, but our bees do not always do it when it should be done. From our own experience, a queen of this year's rearing, going through two good honey flows having the use of two bodies, will be a failing queen the next season unless she is an exceptional queen. These old queens are a loss to any beekeeper, and while I have always held that any up-to-date beekeeper should be able to rear a few queens, if they can't do it, it is money well invested to buy queens and requeen all colonies that have queens that are liable to fail next spring. The colony requeened will make enough more honey to pay for several queens.

I said every beekeeper should be able to rear a few queens. This does not mean that you should not buy some good queens from some reliable queen-breeder. Nearly every year we introduce some new blood in order to keep some pure stock. But if one is to

breed up a strain of honey-getters, they must breed from queens that "bring home the bacon." An observing apiarist knows full well the colonies that have produced the most honey. They have noticed the colonies that are bad-tempered; the ones that cap their honey white; the bad waxers; the hustlers; and the ones that had rather swarm than make honey. These points are under the apiarist's observation and he can pick one or several breeders from his own yard (we are supposing you have Italian stock) that in all probability will outstrip anything he can buy. This is not knocking the queen-breeders by any means, for we must have them; but a queen purchased from any breeder is an unknown quantity until tried out. I would not want to rear queens from a purchased queen until tried out the previous year, if I was breeding a strain of honey-getters. I believe it will pay any apiarist to buy 10 or 15 good queens every year from some reliable breeder. After trying them out one season, mark the best queens, start your cells from part of the best ones the next season, and give the others a frame of drone comb. Flood the yard with good yellow drones, and thus offset some of the thousands of black fellows your good (?) neighbor is furnishing you from his box hive free of charge.

W. S. Pangburn.

Center Junction, Iowa.

* * *

In Oregon.— Practically no rain has fallen in many sections of the Pacific Northwest west of the Cascades since April, which has resulted in the clover drying up early. Following the clover flow there has been a medium flow from French pink (*Centaurea cyanus*). As a result, the honey flow is slightly less than normal and darker. The flow from fireweed will probably be light as a result of the drouth.

In the irrigated sections of western Oregon the alfalfa and sweet clover flow will be slightly better than normal.

From many sections reports continue to come in telling of heavy winter and spring losses. To many the past winter has clearly demonstrated the importance of giving more attention to wintering. Those who gave their bees some protection wintered well with little loss. As a result, many of the large commercial producers are seriously considering packing of some kind. The importance of having a large force of young bees reared during August and September should be emphasized, as well as the need of abundance of stores. The writer believes 50 pounds should be the minimum for western Oregon where more stores are used than in colder sections, due to frequent flights.

Corvallis, Ore.

H. A. Scullen.



HEADS OF GRAIN FROM DIFFERENT FIELDS

How to Secure Chaff for Packing. I have seen the statement in Gleanings that it is impossible to separate the straw and chaff with a modern thresher and blower, but this year I secured a nice lot of chaff for packing the bees. We removed a board in the bottom of the separator just in front of the blower of the wind stacker. This allowed most of the chaff to fall through, while the straw passed over into the blower. A boy can rake it out from under the machine as it accumulates. We used a Frick separator, although I suppose this can be done with other makes of machines.

H. C. James.

Wooster, Ohio.

Importance of Display Signs for Comb Honey. In view of the movement on foot at the present time to educate the public to the proper names and uses of honey, it is amazing to note the atrocious methods still used by many retailers in placing honey before the public.

For instance, the following sign was conspicuously displayed on some beautiful comb honey in the window of one of our grocery stores:

SPECIAL!
PURE HONEY,
25c A CARD.

This honey would have sold better on its appearance alone, as a comb of honey conjures visions of a delightful toothsome delicacy, but I am sure no one would get enthusiastic over the prospect of eating a "card of honey." Too reminiscent of pasteboard.

Another enterprising retailer tried to boost his honey sales by the following:

VERY FINE HONEY,
28c PER CAKE.

Immediately next to this in the window was a display of soap at "5c a cake," so we can well imagine how many prospective customers lost their appetite for honey through seeing this display.

In my opinion beekeepers, especially the large producers of comb honey, would be more than repaid for the slight cost of printing if they would enclose an attractively gotten-up display sign with each shipping case, to be used in presenting their goods to the public. Practically all manufacturers of standard products do this, and the retailer will almost invariably use this prepared advertising rather than go to the trouble of making a sign himself.

The above instances are just two casual observances in this city. No doubt a careful investigation would show that thousands of sales are being lost through the labeling of honey as "cards," "eakes," and other misnomers.

R. K. Rickard.

Minneapolis, Minn.

Bees Good Advertiser for Honey and Other Farm Products. I believe that beekeeping makes as interesting and profitable a hobby as one

can find in country life and, above all, the best kind of advertisement for farm produce. People motoring along judge our products by their outward appearance. The paint on the hives is money well spent, and the orderly arrangement of the hives makes a pretty sight. These are the first attractions that bring customers to our door. A friend who saw I was selling my own honey at home gave me a commission to sell some of his, and I helped him move a large crop. In all, I sold more than two tons of honey from my door. If I were stationed along a good highway with suitable surroundings, I would certainly sell honey whether I kept bees or not.

George H. Foot.

Grand Rapids, Ohio.

Introducing Queens in Difficult Cases. Those who have had poor success in introducing queens by the regular method, especially with hybrid bees, should try this method:

Before introducing the queen nail a piece of tin over the candy end of the cage, which will prevent the bees from releasing her. Remove the queen from the colony to be requeened, insert the cage containing the other queen in between or on top of the frames. After five or six days remove the tin from the candy end of the cage, allowing the bees to release the queen in the regular way, at the same time destroying all queen-cells. The hive should not be examined until after five days have elapsed.

Medina, Ohio. J. E. Thompson.

Breeding Bees Suited to the Locality. I believe that locality plays a very important part in the results obtained with bees and their behavior. I also believe that greater success may be attained by selection and breeding different strains of bees for different localities—even the making of a new race by combining the desirable traits of the different races in one. It cannot be accomplished in one year or in two, but it is, in my opinion, well worth working for. I do not believe that the desired end can be reached by buying queens from different sections of the country, even though the best. The infusion of new blood may be a good thing, but it may prove the opposite of what is expected. Nature's laws aim to build a race to meet the conditions under which they must exist and fulfill their destiny.

Caribou, Maine.

O. B. Griffin.

FOLLOWING is a portion of the tabulated figures on the honey crop, based upon returns from thousands of beekeepers in all parts of the

country to the Bureau of Markets and Crop Estimates, U. S. Department of Agriculture. These figures, which have already been released by the Department, will be published in the July (1922) issue of Weather, Crops and Markets, issued by the Department of Agriculture. The figures indicating the condition of the colonies and the honey plants for the various states are omitted here for lack of room. For the United States the condition of the colonies to July was 93.2% this year as against 89.8% last year, and a six-year average of 89.3%. The condition of the honey plants to July 1 this year was 83.8% as against 78.6% last year and a six-year average of 83.5%.

States.	1922.		1921.		Propor. of crop usually produced Av. 1916
	Lbs.	Lbs.	Lbs.	Per cent	
Maine	17	20	10	20	
New Hampshire	20	30	22	48	
Vermont	17	21	11	24	
Massachusetts	18	31	18	40	
Rhode Island	15	3	19	40	
Connecticut	15	35	18	30	
New York	20	26	17	29	
New Jersey	32	26	28	60	
Pennsylvania	33	22	22	45	
Delaware	15	0	21	70	
Maryland	35	17	30	76	
Virginia	25	14	25	63	
West Virginia	20	20	19	61	
North Carolina	22	8	20	63	
South Carolina	21	11	23	75	
Georgia	20	27	25	70	
Florida	45	35	39	65	
Ohio	50	50	27	55	
Indiana	60	47	24	47	
Illinois	45	15	15	38	
Michigan	42	38	23	44	
Wisconsin	34	25	17	35	
Minnesota	24	15	14	29	
Iowa	40	24	21	35	
Missouri	35	28	18	50	
North Dakota	30	0	13	10	
South Dakota	20	17	12	20	
Nebraska	20	18	13	19	
Kansas	24	18	14	40	
Kentucky	28	40	29	60	
Tennessee	17	30	24	75	
Alabama	20	25	23	65	
Mississippi	18	26	26	70	
Louisiana	45	24	27	75	
Texas	25	33	26	65	
Oklahoma	30	20	16	44	
Arkansas	30	17	21	75	
Montana	5	10	8	10	
Wyoming	10	8	2	0	
Colorado	7	4	4	7	
New Mexico	22	18	15	37	
Arizona	30	25	35	60	
Utah	3	4	6	10	
Nevada	25	0	12	10	
Idaho	5	4	4	5	
Washington	17	10	12	25	
Washington	17	10	12	25	
Oregon	21	8	14	40	
California	44	17	35	60	
United States	30.0	23.7	22.5	48.7	

JUST NEWS

Editors

The Georgia Beekeepers' Association will hold its regular annual meeting at Hopkins, Ga., August 24, 25 and 26. This is one of the meetings

arranged by the schedule committee of the American Honey Producers' League. Information concerning the program for this meeting may be had by writing to J. J. Wilder, Waycross, Ga., president, or to L. C. Walker, Alma, Ga.

* * *

Colin P. Campbell, attorney-at-law, Grand Rapids, Mich., who is preparing a booklet for the American Honey Producers' League on laws pertaining to beekeeping, reports that he expects to have the manuscript finished in July. This booklet is to contain the various court decisions that have been handed down from time to time where bees were involved in a law suit. It is also to contain a tabulation of the inspection laws in the various states. Mr. Campbell is not making any charge for his services in preparing the manuscript for this booklet. The American Honey Producers' League has appropriated \$100 to pay for the mechanical work in its preparation. The booklet will be sold at a low price by the American Honey Producers' League when published.

* * *

The Empire State Federation of Beekeepers' Co-operative Association, Inc., formerly the New York State Association of Beekeepers' Societies, will hold an annual picnic and summer meeting at the home apiary of N. L. Stevens, Venice Center, Cayuga County, N. Y., Friday, August 4, 1922. Beekeepers of New York State have declared this a holiday and the Federation has used every effort to make this the best and biggest summer meeting ever held within the state.

* * *

The Wisconsin Beekeepers' Field Meet and Conference will be held at Green Bay, Wis., Aug. 7-11. This is the fourth annual meeting of this kind held under the auspices of the College of Agriculture and the State Beekeepers' Association. Among the speakers from outside the state are C. P. Dadant, Dr. E. F. Phillips, E. R. Root and Geo. S. Demuth.

* * *

The Eastern Massachusetts Society of Beekeepers will hold their annual field day at Boston, Mass., on Saturday, August 19. Dr. E. F. Phillips is to be the principal speaker at this meeting.

* * *

The Pennsylvania State Beekeepers' Association, together with the Northern Pennsylvania Beekeepers' Association, will hold a joint field meeting at the apiary of Harry Beaver, Troy, Pa., on August 3.

QUESTION. —I have a market for more chunk honey than I can produce. Would it be all right to buy some extracted honey to feed back to the bees in order to be able to produce more chunk honey?

Illinois.

Frank Van Hooveheke.

Answer.—Feeding back extracted honey to produce chunk honey or comb honey is difficult to accomplish at a profit. When everything is just right the bees will sometimes store from two-thirds to three-fourths as many pounds as you feed them, but when things are not exactly right they will sometimes store only one pound for every two pounds fed. There is a great difference in colonies in this respect and weather conditions have much to do with this. Formerly many comb-honey producers practiced feeding back extracted honey to cause the bees to finish the sections that were unfinished at the close of the honey flow, but this practice has been given up by most producers on account of the losses which came about and the inferior product resulting from feeding. When honey is fed back in this way, the comb honey thus produced usually granulates early in the season. Perhaps you can purchase chunk honey from some other beekeeper to supply your trade. If so, you will find this much more satisfactory than to try to produce it by feeding back.

Honey from Corn.

Question.—Do bees commonly put corn honey into sections which are left on a few days too long? Is not corn honey a very dark or sooty-colored honey?

Arthur S. Hill.

Pennsylvania.

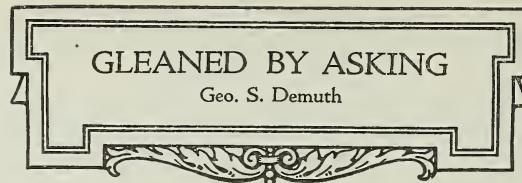
Answer.—Corn is not a nectar-bearing plant. It is wind-pollinated, i. e., the pollen that fertilizes the corn is carried by the wind instead of by insects. Wind-pollinated plants usually are not nectar-bearing. The dark honey which the bees stored at the close of the season must have been gathered from some other source. It may not have been floral honey at all but honeydew, in which case, of course, it would be gathered from whatever plant the aphis which produces it lives on.

Bees Do Not Cap the Honey.

Question.—Why does one of my colonies fail to cap its honey, while the others cap theirs?

Pennsylvania. Edwards McClure.

Answer.—There are several conditions under which the bees hold open the cells after they have been filled with honey. (1) When combs are very thick so that the cells are quite deep, the ripening process is slower than in combs having shallower cells, and, since the bees do not seal the honey until it has been ripened, the combs having deeper cells are sealed later than those having shallow cells. (2) During a good honey flow, if the bees become crowded for room, they are



inclined to hold the cells open even after the honey is ripened, apparently for the purpose of crowding in a little more honey by further ripening. In such

cases, giving an additional super usually results in the honey being sealed promptly as soon as work is begun in the new super. (3) If there is an opening in the super, the bees usually fail to seal the honey near the opening. For this reason it is not practical to have ventilators in comb-honey supers as some do in extracting-supers. (4) At the close of the season the bees usually leave some of the latest-stored honey unsealed. There is no way known to induce them to seal the last few pounds they store.

Looking Through the Hives for Moth Larvae.

Question.—Is it necessary for me to look through the hives for moth larvae? I found two of these inside of one of the covers.

New Jersey.

Ruth French.

Answer.—No. Let the bees do the work of looking for moth larvae and carrying them out if any get into the hive. Strong colonies of Italian bees are able to defend themselves against the larvae of the wax moth. If you should find any moth larvae in the combs within the hive, this would indicate that there is something wrong with the colony (especially if Italians), such as queenlessness or one of the brood diseases, which has caused it to become weak.

Velvet Bean as a Honey Plant.

Question.—Is the velvet bean a good honey plant? I can find nectar in the flowers but have never seen any bees working on them.

Alabama.

J. M. Sturtevant.

Answer.—The velvet bean is reported as a good honey plant where it is grown in sufficient quantities. The fact that nectar was visible in the flowers indicates that it was yielding freely at the time. The bees must have been finding plenty of nectar elsewhere since none were seen working on the flowers. Sometimes during a heavy honey flow the bees seen working on the flowers are not so numerous as one would expect, but when the honey flow slackens the bees appear on the flowers in greater numbers. This is probably because the bees spend but little time in gathering a load of nectar when it is abundant, visiting fewer flowers, while many flowers must be visited to obtain a load when nectar is scarce, making it necessary for the bees to spend more time searching.

Treatment for Foul Brood.

Question.—Please give instructions for getting rid of foul brood. Is it necessary to destroy all the combs and honey, too?

U. R. Gentzell.

Pennsylvania.

Answer.—If you refer to American foul brood it is necessary to destroy the combs, but the honey can be saved if desired and

fed back to the bees after it has been sterilized by boiling it in a closed vessel for 30 minutes, first diluting it by adding about equal parts of water to the honey. If there are only a few colonies to be treated, it does not pay to try to save the honey. The wax in the combs can be saved by rendering them if the beekeeper is equipped to do this, but those who are not willing to take great care in doing this should burn the combs or they may spread the disease among other colonies.

The best time for treating colonies having American foul brood is at the beginning of the honey flow, for then they build the new combs readily and should be able to store enough honey for winter. Where there is a fall honey flow colonies can successfully be treated now; but, if there is no fall honey flow, colonies having this disease at this time may as well be destroyed, especially if but one or two diseased colonies are found in an apiary. If the bees are in an old, worthless hive, the hive, bees and all can be carried away in the evening after the bees are all at home, placed on top of a brush pile and burned.

To treat a colony having American foul brood, set its hive off of its stand and put another hive in its place, the new hive being equipped with narrow strips of foundation. Now take out the combs of the diseased colony and shake the bees from each, shaking them upon a newspaper placed in front of the new hive so arranged that the bees will enter the new hive as they are shaken from the combs. When the bees have been shaken from all of the combs, those which cling to the old hive should be dumped in front of the new hive. The combs should be burned or melted immediately unless several colonies are to be treated, in which case the combs can be placed in an extra hive-body and put on top of one of the diseased colonies which is to be treated three weeks later after the brood has emerged. Only the most careful beekeepers should attempt to save the brood in this way.

As soon as the bees have all been transferred to the new hive every part of the old hive should be taken away and thoroughly cleaned on the inside, to be sure that not a particle of honey can remain on the walls of the hive. Before being used again it is well to scorch the inside of the old hive by means of a painter's torch or by pouring kerosene on the walls, and then burning it off, being sure to put on the cover to smother the fire before the wood is burned.

A queen-trap or an entrance-guard should be placed over the entrance of the new hive for a few days to prevent the escape of the queen, if the colony should swarm out after treatment as they often do.

The treatment for European foul brood is quite a different matter. This disease is controlled largely by keeping the colonies strong, especially in the spring, and keeping only a good resistant strain of Italian

bees. If the disease develops under these conditions, dequeening for 10 or 20 days, and then requeening with a young Italian queen is usually sufficient.

Liquid Capacity and Honey Capacity of Jars.

Question.—What is the difference between the liquid capacity and the honey capacity of jars? The liquid capacity of a jar holding one pound of honey, net weight, would be 12 ounces according to my understanding; therefore a jar having a 10-ounce or 11-ounce liquid capacity is too scant. Am I right? Josephine Morse.

Massachusetts.

Answer.—The liquid capacity is figured on the basis of pure water, and, since the specific gravity of honey is nearly 1.5 or one and a half times as heavy as water, the honey capacity of any container can be figured by multiplying the given liquid capacity by 1½. A jar of 12-oz. liquid capacity would therefore hold between 17 oz. and 18 oz. of honey. A 10-oz. jar liquid capacity would hold 15 oz. or a little less of honey. A 11-oz. jar liquid capacity would be just about right for 1 pound of honey. A 9½-oz. jar liquid capacity is just right to hold 14 oz. of honey.

Italianizing Late in the Season.

Question.—Is the first of September too late to Italianize my bees? Walter Steen.

Virginia.

Answer.—The first of September is not too late to Italianize, but it is a little too late to obtain the full benefit of having a young queen during the fall brood-rearing period when the bees that survive the winter should be reared. By requeening in July or early in August with young Italian queens you not only Italianize your colonies but also secure better colonies for winter, if in doing this an old queen is replaced, for the young queen will lay more eggs in August and September than an old one. The bees that are in the hives now are not the ones that form the winter colony since they will all die of old age before winter really begins; hence the importance of having a young queen during August and September.

Appearance of Unripe Honey.

Question.—What is the appearance of unripe honey? W. Burden.

New York.

Answer.—While still in the combs, the unripe honey is in cells that are not capped, and if still quite thin it can be shaken out of the combs or it may spill out of the cells if the combs are held in a horizontal position. Newly gathered nectar is not always so thin as this, however, especially in a dry climate or during a dry season. If extracted before it is ripened, honey is thinner than when it is well ripened and weighs less than 12 pounds to the gallon. Well-ripened honey weighs nearly 12 pounds to the gallon or nearly 1½ pounds to the pint. Unripe honey, if kept for some time, usually begins to ferment. When it does this the flavor is impaired and often the cans become swollen, sometimes even bursting.

THROUGHOUT the greater portion of the United States August is a quiet month for the bees, though the bee-keeper may be busy caring for his honey crop and seeing that his colonies are in proper condition for fall. Usually there is but little if any nectar available during the first half of the month, except in certain especially favored regions such as portions of the alfalfa and sweet clover regions of the West. While the recent rains in the clover region have revived the white clover so that there may be a large amount of bloom in some places, not much nectar can be expected from this source in August. Beginners are often puzzled to note that the honey flow from clover ceases in July, even though there is apparently an abundance of bloom left. Occasionally the late-blooming clover furnishes considerable nectar, but it can not be depended upon even to furnish enough for the bees to live on this month. In portions of the clover region, conditions are favorable this season for some nectar from the second crop of red clover. Sometimes this plant yields in sufficient quantities to make it necessary to put the supers back on the hives to furnish room for the red clover honey. Those who are located where much red clover seed is produced, should watch their colonies to see if they store from this source.

When no nectar is to be had most of the bees if undisturbed stay at home even during the middle of the day, only a few going to the fields. Some of these carry water and some carry pollen. This lack of flight is quite noticeable, especially when the honey flow closes abruptly, thus emphasizing the contrast between the busy days of the honey flow and the leisure after its close.

During hot weather great clusters of bees hang quietly on the outside of the hive in strong colonies. Beginners, who have read in the books and journals that bees should not be permitted to cluster out in this way, are sometimes greatly disturbed to find all their strong colonies clustering out after the honey flow has closed, but it is quite normal for them to do so. The great army of workers that have suddenly found themselves without a job must go somewhere, and, if there is not room for all of them inside the hive during the heat of the day without danger of suffocation or melting the combs, clustering out is the proper thing for them to do. The caution in the books and journals against permitting the bees to cluster on the outside of the hive refers to clustering out during the honey flow, not after it has closed.

During hot weather bees use considerable water, and the water carriers are sometimes annoying around watering troughs or pumps.

TALKS TO BEGINNERS

Geo. S. Demuth

This can be avoided by placing a jar of water near the hives to supply the needs of the bees. A layer of cork chips, such as those used in shipping grapes, makes a good float to prevent the bees from drowning. After the bees have formed the habit of obtaining water at a pump or watering trough it is difficult to entice them away by placing water near them; but, if this is done early or the supply shut off at the other place, they will soon learn to go to the supply provided by the beekeeper.

Care of Comb Honey.

Those who took off comb honey promptly as soon as finished, as advised last month, will no doubt have it all taken off before this journal is mailed, except in the few regions where the honey flow continues through July. The supers of finished comb honey should be stored in a dry room, preferably an upstairs room. Comb honey will absorb moisture through the cappings if exposed to dampness, and if much moisture is absorbed the expansion of the honey in the cells sometimes bursts the capping and honey oozes out, thus spoiling its appearance. Such honey usually ferments slightly, which also spoils its flavor. Even if the cappings are not broken out the expansion of the honey sometimes causes it to fill the cells completely against the capping, causing the capping to take on a water-soaked appearance. All this trouble can be avoided by proper storage in a dry room.

The supers of finished honey should be piled in a tight pile, the first super being placed on a flat board or an inner cover and the top of the pile covered tight. The pile should not rest directly on the floor unless in an upstairs room. A hive-body or box can be used to support the pile above the floor.

Wax Moth Larvae May Damage Comb Honey.

Sometimes the larvae of the wax moth get into comb honey after it is taken from the hives. The first indications of their work are patches of fine particles resembling fine sawdust, which may be seen on the surface of the combs or in vacant cells at the edge of the section. A little later the tiny larvae can be seen eating holes in the cappings.

If wax moth larvae appear they should be killed by placing a small amount of carbon bisulphide (obtainable at drug stores) in a shallow pan which is set on top of the upper super in the pile but inside of an empty super, the cover being placed over this empty super. An ounce of carbon bisulphide is sufficient to kill all the wax moth larvae in five or six ordinary comb-honey supers within half an hour. This fumigation, if needed, should be done about two weeks after the honey was taken from

the hives. It should then be safe without further fumigation if stored in tight boxes or comb-honey shipping cases.

Early Honey Removed Before Fall Flow.

Honey that is to be extracted should not be left on the hives longer but should be taken off and extracted early this month, if this has not already been done. The only exception to this of course is in the few locations now having a honey flow; but, even in such locations, the earlier-gathered honey should now be taken off and extracted. Later in the month the bees may gather darker honey than that gathered earlier, and the two kinds of honey should not be mixed.

In taking off honey during a dearth of nectar, great care is necessary to prevent robbing. If the honey is taken off by means of a bee-escape, it is important to be sure that there are no cracks under the cover where bees might crowd in, for robber bees would soon find these openings, and when the super of honey can no longer be protected by the bees inside, the robbers make quick work of carrying away the honey if they are able to crowd through a crack into the super. When honey is taken off without the bee-escape as described last month, the combs of honey, as they are taken out of the hive and put into the extra super, should be covered immediately with a piece of canvas so robbers do not get a taste of the honey. Honey that is taken off in this way and extracted immediately is easier to extract than after it becomes cold. For this reason some use the ventilated escape-board, for with this the honey does not cool off as much as when the ordinary escape-board is used.

What Colonies Need in August.

As to the care of the colonies this month, the important thing to keep in mind is building now for next year. The condition of the colonies at the beginning of winter is determined largely by the conditions during this month and next. No matter how strong the colonies are now, if no more brood were reared this season they would be worthless for winter, since the bees now in the hive will all have died of old age before winter or be too old to survive the winter. The bees which live through the winter and early spring must therefore come from the eggs that are laid from this time until brood-rearing ceases in late September or early October in the North, and a little later in the South. Where there is no fall flow, the actual strength of the colony now is less important than the amount of brood that is reared in August and September. The bees naturally reduce the amount of brood during late summer and fall, especially if the queen is old or inferior. When there is a fall honey flow the bees usually rear plenty of young for winter; but, if there is a dearth of nectar, they may not do so except in those colonies which have young queens reared this season and which have a sufficient amount of honey so that brood-rearing need not be reduced on account of

insufficient stores. The only safe thing for the beginner to do, who does not know whether his locality furnishes a dependable fall honey flow, is to leave enough honey now to run the bees through a possible dearth of nectar from this time on. Usually colonies operated for extracted honey put nearly all their honey into the supers, so there would be but little left if all the honey were taken from the supers. At the close of the honey flow, at least five full frames of honey should be left in the upper story when taking away the honey. This much should be left, even though there will be none to extract unless a fall honey flow is certain. Colonies operated for comb honey will have more honey in the brood-chamber at the close of the honey flow, but even these sometimes do not have enough to last them through a long dearth of nectar during late summer and fall. To be safe, they should have the equivalent of four or five full frames of honey.

In addition to an abundance of stores each colony should have a good queen. This is a good time to replace old and otherwise inferior queens, for a young queen that begins to lay this month, together with plenty of stores, will practically insure that the colony will be in good condition for winter.

To find and kill the old queen and introduce a young one at this season is sometimes quite a task for a beginner; but it can be done, and the ambitious beginner need not hesitate to undertake it if he has only a few colonies. The printed directions, sent out by the queen-breeder, for introducing the new queen should be strictly followed.

It is not necessary, of course, to replace any but old queens. If any of the colonies have swarmed during the season, it should be remembered that the parent colony has a young queen if all has gone well, while the swarm has an old queen. The young queen in the parent colony should not be replaced, unless she is of inferior stock or is otherwise undesirable.

Management for a Fall Honey Flow.

In localities where much buckwheat is grown and near swamps where fall flowers are abundant, the main honey flow of the season may begin this month. In such localities of course it is not necessary to leave so much honey in the hives at the close of the early honey flow. For extracted honey most of the early-gathered honey can be extracted and the empty combs put back on the hive and left there for the fall honey flow. It is usually not best to put on comb honey supers for the fall honey flow, for fall honey is usually dark and not suitable for comb honey. It is better to put on an upper story of combs or full sheets of foundation as for extracted honey, and, if these are filled, this dark honey may be needed next spring for brood-rearing. If not too far north where winters are severe, this upper story can be left on all winter. Colonies thus abundantly supplied should build up rapidly next spring.

ON page 742 of Gleanings for November, 1919, you will find a letter from S. S. Kresge and some of my remarks in regard to it. Kresge is the man who gave \$10,000 in a single subscription to the Anti-saloon League while the fight was under way to make Michigan dry. The

brewers got track of it; and knowing that he is the proprietor of a chain of five and ten cent stores scattered all over our land, they suggested that it would be wisdom for him, to be a little careful or the liquor party might decide unitedly to get him into financial trouble. Instead of being scared he promptly turned over to the Anti-saloon League another \$10,000; and some good authority has stated that this man Kresge probably did more to help Michigan take the lead in the list of dry states of the Union than any other man.

Our readers will remember that I went through Henry Ford's great factory, or string of factories, some years ago, and I wrote it up for these pages. Well, I have been thinking for some time, especially since Ford is just now astonishing the world, that I should like to go through his plant once more. And now you can understand that it was one of my "pleasant surprises" when I received an invitation to visit Kresge, and at the same time look over the Ford plant once more. If you now excuse me I wish to sidetrack a third time.

Some of you have taken Gleanings long enough to remember my hobby of five and ten cent stores away back in 1880—42 years ago; and I gave on these pages pictures of the five and ten cent counter which we installed on the fairgrounds here in Medina, and told you what a success it was. I find by looking back that I continued the five and ten cent trade, and sending the articles by mail, for something like 15 years. At about that time I was advised by the doctors that I had only a short time to live, even though I should go to a warm climate, give up business, and do everything possible to live a little longer. Then a little later I told about running away from my own *funeral*, by riding a *bicycle*. Now, about the time I dropped the "counter store," as we called it, my good friend Kresge took it up. I recently went through his great store in Cleveland. Although his establishment is of itself a small-sized *city* (so it seemed to me), it was really a beehive, of human beings instead of bees. I think there were something like 250 clerks, most of them

OUR HOMES

A. I. ROOT

What hath God wrought?—Num. 23:23.
Seek ye first the kingdom of God, and his righteousness, and all these things shall be added unto you.—Matt. 6:33.

I have also given thee that which thou hast not asked, both riches and honor; so there shall not be any among the kings like unto thee all thy days.—I. Kings 3:13.

15 cents. I am told there are now something over 200 such Kresge establishments scattered throughout the principal cities of the United States. Now, please do not think I am bragging when I suggest to you that not only Kresge but even Luther Burbank himself have intimated to me that they were pupils in bee culture, and took my little journal, years ago, almost when it was started. Kresge especially tells me of the great interest with which he studied the A B C book in years gone by, and that the money he received from his bees helped him to finish his course in college. Now for the Ford establishment.

The Ford Plant Makes Finished Automobiles Faster Than a Queen Bee Lays Eggs.

I shall have to go over it very briefly on account of my limited space. As before, we had to wait for the crowd up to a certain hour, when a guide was appointed to take charge of visitors. The first thing that impressed me was just *acres* of busy men, all so close to each other that many times it seemed they lacked elbow room. A pathway was roped off for visitors; but when there was actually no room to get through, Ford was thoughtful and kind enough to make an overhead bridge or runway where visitors could stand and see what was going on below. I was impressed during my former visit with the moving platforms or broad belts that carried the heavy parts of the automobile from one place to another. In many places this belt moved so slowly that the workmen on both sides of it performed their part of the work while it was moving. Then besides these moving platforms or tables, as it were, there were belts or wire ropes in motion overhead; and from these moving ropes hooks came down, and workmen were constantly placing pieces of finished work on these hooks; and so, instead of heavy lifting, or sending a boy or man to carry the different parts, they had but just to reach overhead and unhook where wanted. These strings of moving hooks went everywhere. It seemed as if they traveled miles.

I was interested in studying humanity as well as machinery—yes, more so. I wanted

girls—nice, bright, quick, smiling girls. Everybody seemed to be happy. The store was so crowded that we often had to wait before we could get around. In one of the basements there was a neatly arranged restaurant or lunch room; and I had a very nice supper—all that was good for me—for just

to see if the thousands of busy men and boys were happy at their work. While many of them looked weary (for it was near the hour of quitting) I saw no evidence of discontent. I think they work on eight-hour shifts, and the great factory is kept running without stopping from 12 o'clock Monday morning till 12 on Saturday night. So far as I could learn, Ford has given strict orders to "remember the Sabbath day to keep it holy"—that is, so far as possible. I watched the sea of human faces to see if I could spy out drones or lazy or dishonest men. My good friend, Rev. A. S. Gregg, of the Civic Reform Bureau of Cleveland, who was along with us, suggested that a man could not very well *loaf*, with a busy man before and behind him depending on his movements. So they all work together like the bees in a hive; and I could not discover in all that trip that occupied 45 minutes any one who seemed to act as foreman over the different gangs. I did not see an idle man anywhere. By the way, our friend Kresge, notwithstanding his chain of over 200 stores, has just recently taken up bee-keeping once more; and as we passed along he suggested in his droll way that Henry Ford was turning out a *finished automobile* in about the same space of time that it takes a *queen bee to lay an egg*. Our guide, I think, informed us that they are making now about 4800 automobiles, ready to run, every 24 hours. We have *records* of queens laying as many as 3000 eggs in a day; and it is very likely that there may be an occasional queen that will lay 4800 eggs.

Perhaps at just this point some of you may wonder what the second text has to do with what I have been telling you. It has suggested itself to me in this way: Both Kresge and Ford started out, so far as I can determine, to benefit humanity, and not to make money and get rich; but the great loving Father has blessed them as he did Solomon of old in giving them wealth as well as wisdom. I have been watching both Ford and Edison since they stepped foot among humanity in this busy world of ours; and I have been impressed by the fact that in both cases their mission and desire were *not to make money*, but to benefit humanity. They both loved their fellow-men, and God recognized them and gave them the means. In fact, we do not know what they may do yet before they die. And our good friend Kresge in another way has helped humanity. When I started that little counter store, as we called it 42 years ago, it was principally with the view of helping young married couples with limited means, to get the things needful in starting a home, at a low price, and with as little running about as possible; and Kresge is doing this on a tremendous scale all over our land. He is not only a temperance man but a Christian man, and God has honored him.

As we left the Ford plant I remember saying to my good friend Gregg that, if Ford had not already done so, he ought to

thank God devoutly for having permitted him to be the humble instrument of doing so great a work. Gregg's reply was something like this:

"Mr. Root, I feel sure our friend Ford thanks God for what he sees being done, very much along the same line you do; but where you say 'Thank the Lord' out loud, Ford does it in another way. We are not all alike, even in our way of giving thanks to God."

With the above preface, my good friends, I want to quote to you Kresge's own words when he addressed our helpers here at the time of his visit to our establishment the fore part of May.

Address of S. S. Kresge at Medina on May 9, 1922.

I have been almost talked to death, so I don't know just what else I have to say, but I might give you a little incident of what happened while Billy Sunday was in Detroit and we gave up our house for eight weeks to house his organization. That was in 1916, the same year that Michigan was made dry. During that time, Fred Fosdick of Fitchburg, Mass., called with a delegation to solicit Billy Sunday to come out to their town, and Mr. Fosdick, by the way, is one of the committeemen of the National Anti-saloon League (I am now headed for their meeting at Washington Thursday). He stopped at a corner where a policeman was stationed and said, "Officer, which hotel is Billy Sunday stopping at?" "He isn't stopping at no hotel—he's at Kresge's mansion," replied the officer. "Who's Kresge?" returned Mr. Fosdick. "Don't you know who Kresge is? He's got about a thousand stores around the country." Of course Mr. Fosdick knew all about me, but he wanted to find out how well I was known in my own town.

About 35 years ago (I was then located on a farm in Pennsylvania, where I am now headed to see my mother), I used to buy bee supplies from this place. I had many happy days with bees. I always had a great fondness for them, because my parents gave me the privilege of keeping the money from the bees, as I worked with them at odd times and on rainy days, and really robbed my parents of no time. About that time they sent me to Fairview Academy, about three and a half miles away, where I walked one whole winter, morning and night, no matter how deep the snow or what the weather. I went with the understanding that, if they sent me there until I was 21 years old, I should give to them all I earned outside of from the bees. They needed it, and I knew they needed it. Just around that time I had some pigeons—I really don't know just where I got them, but when I sold them I bought turkey eggs with the money. I had poor luck with turkeys, but sold them the next fall and with that money bought some bees. When I was 20 years of age the bees made enough honey so that when I sold the crop in the fall, I bought a solid gold hunting case watch. In case you do not understand what a hunting case is, it was something like this one, only it had a cover over the face and was about twice as large and weighed twice as much or more. I don't remember just how much I paid for it (about \$55.00), but I paid for it and had some money left. The winter following I taught school and walked two miles every morning and evening from my parents' home and gave them the proceeds every month after paying for my necessary wants. The next fall I was examined to teach but didn't get the school I wanted, so went to Scranton and worked in a grocery store. After paying my expenses, whatever I had left I gave to my parents. I boarded with my sister and gave her \$15 per month for board and washing. I was getting \$40 a month, and my parents always got some money out of that. In the spring I quit my job and went back on the farm again, and during that

season the bees made about a ton and one-half of honey, which I sold for about \$150.

That fall I was a little past 21 and I went to the Eastman Business College. I didn't know how much it was going to cost me, so I had talked with my father and he said he would help me through if I didn't have enough. It cost \$126 for a four months' bookkeeping course, so I had some money left. I started out and did several things for about two years and then got a job as book-keeper in a hardware store—was there two years and two months, which gave me an opportunity to learn some things about that business. After that job I traveled out of Wilkesbarre, which was only 19 miles from Scranton. I traveled for five years and two months and during that time I sold to all kinds of stores—large department stores, small retail stores, wholesale hardware, wholesale druggists, meat packers, etc. During this time I sold to Woolworth and Knox who were then in the 5 and 10 cent business. Woolworth was at that time (1894) opening his twenty-third store in Albany, New York. He gave me an order of one gross of a certain article for each of the nineteen stores, which led me to believe that there was quite a volume in the chain store business. After traveling five years and two months I had saved up some money, working on salary and commission basis, and I left the road and went into the five and ten cent store business myself. That was 25 years ago last March. I have built a business which year after year has been increasing to greater volume. For the last dozen years there has been no recession. Some years are better than others; but, on the whole, the volume and net have been in excess of the next preceding year. There were 199 stores operating the first of this year, doing a business last year of almost \$56,000,000.

I do not know but this plant of yours at Medina had considerable to do with my start in life. I really think it helped me to pay dividends on the five and ten cent store business. I am going to say to all of you that I am just as fond of bees today as ever and am still keeping them as a pastime and have just been trying to get official information, asking all sorts of schoolboy questions, which might appear to you people here as foolish. But when I go into a thing, I am not satisfied until I know just about as much as the other fellow. I am glad to have had this opportunity of meeting all of you, and, if anything I have said is worth anything to you, you are welcome to it.

"MEND YOUR OWN TINWARE."

"All's Not Gold That Glitters."

The article with the above heading in our issue for June illustrates something I have several times mentioned on these pages. Whatever success I have so far achieved during my busy life in bee culture, exposing frauds, or anything else, has been largely due to the kind friends scattered all over our land (and sometimes other lands) who have been so ready to turn in and help me in my efforts to help my fellow-men. A remarkable letter right along this line is at hand. Perhaps I should explain that I found we have seven subscribers in Atlanta, Ga. As soon as the article was in type I mailed to each one a copy of it. The letter below is the only one we have room for. If the good friend who writes this is a sample of the family doctors, let me say once more, "May God be praised for our family physicians."

Mr. A. I. Root, Medina, Ohio.

My dear friend:—Your favor asking information regarding the "United Specialty Company" of Atlanta received yesterday. They are not listed

in either the telephone or city directory, and a friend of mine in the postoffice says that they have no record of any such concern ever having been here, and the license department of the city has never in the last five years issued a license to such a firm. I have seen a man selling such a solder on the streets of Atlanta only a few months ago, but he evidently was doing business without a license or his license was obtained under some other name. Today I had a man cover the business section of Atlanta thoroughly, and he reports that there is no such material being sold at the present. Therefore I have only one chance of getting the information that you desire, and that is to get the chief of police to take the matter up with his three watches and maybe in that way we can obtain some information. This will require action by the police commission, but I expect to have such permission within a few days. I am sorry that I have not been able to obtain any information, but if I do in the future I will immediately write to you.

Thanking you for allowing me to attempt to do a favor for the man who writes "Our Homes," and who preaches the best sermons that I read or hear, I am, with my very best wishes,

Yours very truly,

Linton Smith, M.D.

67 Mayson Ave., Atlanta, Ga., May 20, 1922.

Right along in line with the above comes one from a chemist.

I chanced to see your request for information on Solderine. A similar article, used in identically the same way, has been sold by street peddlers in Montreal for some years. I purchased some a few years ago and tried it out. Since it appeared to do the work I analyzed some of it, but will have to rely on my memory for the results. It consisted chiefly of sulphur (in fact, the solder would take fire) through which was intimately distributed finely divided metal. This metal was chiefly aluminum with small amounts of magnesium and iron. Approximately the per cent composition was sulphur, 60%; aluminum, 30%; magnesium, etc., 10%. When heated the sulphur is melted and on cooling forms for the hole a plastic plug which may be hammered and roughly treated when freshly applied. This makes a great sale's point. However, as you know, plastic sulphur will soon change to the common brittle form which can not be knocked around.

F. P. G. Shaw, M. A., M.Sc.

1022 Dorchester St., Montreal, June 9, 1922.

In my article referred to in the June issue I said: "It seems to me the invention may be worth millions of dollars." I am glad I put in the words "It seems to me." One other friend whose letter I have not retained said something like this:

"Mr. Root, the soldering process *works* all right and *looks* all right; but, sad to tell, it does not *stand*."

Now, the reason it does not "stand" has been explained by the chemist. I saw the man on the fairground solder up breaks in all kinds of metal. The liquid metal, so it looked to outsiders, flowed beautifully, ran into cracks of rusty tinware, and seemed to work exactly like melted tinner's solder. I learn that the thing has been done by peddlers and hawkers on fairgrounds, and even in cities, all over this land of ours. Why is it not on sale by our hardware men, tinsmiths and others? I will tell you. By some process, unknown to me just now, aluminum is easily procured in the form of a very fine powder, exactly like *dust*. To my surprise we have been using it for years to make the "aluminum paint" for lettering our honey-extractors. Well, somebody without conscience, or at least not much conscience, dis-

covered that this aluminum powder would mix with melted sulphur so as to look exactly like melted tinner's solder; and because melted sulphur will run into everything and on every thing, and stick pretty tenaciously (perhaps better on rusty metals than if they were bright) this man without a conscience discovered peddlers could make big pay by exhibiting it and recommending it as real solder. Now, melted sulphur, or brimstone, as it is often called, is a pretty good cement of itself. If you put it into a cavity or hole where it can not get out, the fact that it expands in cooling, exactly as water expands in freezing, is a fine thing. Bolts and even fence-posts are fixed durably into a hole drilled in a block of sandstone, by pouring melted sulphur around the posts or bolts. When it crystallizes after a time, and turns to brimstone, it is almost as firmly fixed as if imbedded in cast iron.

Let me now digress a little.

When a boy in my teens I went around from house to house mending tinware free of charge. Of course every housewife had more or less leaky tinware. When I said I did the work free of charge I explained that it was because I had a little bottle of soldering-fluid for 25 cents used in mending the tinware. Then I showed the housewife or the boys and girls how to do it. And I made pretty good wages except for the fact that I was obliged to travel on foot. We did not have bicycles then, and of course I had to pay for my board and lodging. Well, the success of this scheme depends on the fact that the agent mends the tinware in order to show the people how. After having done so, of course they do not refuse to pay him 25 cents, or even 50, for a stick of sulphur combined with this powdered aluminum. No tinner or hardware man would handle it, because, after this stuff proves to be brimstone instead of solder, his customer would come back, and this is why it is hawked through the cities or sold on fair-grounds.

Now, the people I have shown up may come back at me and say the sulphur or brimstone repair not only looks nice, but, when blended with aluminum powder, will stand a long while, and in many cases it does considerable service. Of course there must be a big profit to have the agent travel around and show people how to use it. The largest manufacturer prints directions as below:

INSTANT MEND-ALL.

Price 50c—Saves You Many Dollars.

Mends granite, aluminum, galvanized iron, tin, copper, brass, or any kind of metal.

Directions for Using:—Heat article to be mended on any kind of fire, hold pencil on until it flows freely, then dip in water. Articles you can't set on fire to heat, such as radiators, tanks, busted pipes, etc., light with match and warm article with lighted paper; if it blazes after mending, blow out.

Satisfaction guaranteed.

INSTANT MEND-ALL SOLDER CO.
1208 Hampton Ave. Paducah, Ky.
Agents Wanted.

They sell sticks by the hundred for 6 cents apiece. If you take a thousand sticks the price is only 4½ cents each. But the retail price is 50 cents. The 50 cents pays the agent for his time in mending their utensils and teaching them how to do it.

In some cases it seems the price is \$1.00 for a large-sized bar. See letter below:

I read your description of the new metal in Gleanings, and I think that I have the same thing. A man passed through here about one month ago demonstrating and taking orders. He would not give an agency for less than an order of 100 bars, and I ordered the 100 bars after I saw him mending holes in different kinds of cooking ware, including granite and aluminum. These bars which he had with him measured one inch across and were half round and five inches in length, and retailed at \$1. He refused to tell where it is made. He said he had the state right and would deliver every month to all his agents, and they must all sell at his fixed retail price. S. Whann.

Polk, Pa., June 20, 1922.

Perhaps I should add that in working with these sulphur and aluminum cements you will have to be careful about overheating; and if you use flame for the heat, the flame must be on the side of the utensil opposite where the solder is applied, for the reason that, if you get just a little too much heat, the sulphur will take fire. When it does take fire you must blow it out or dip it in water. So long as the sulphur remains in a plastic condition, say like wax or rubber, it is all right; but in a week or ten days it turns to brimstone and lets go whenever it gets bumped a little.

Here is something still further in regard to the sulphur-aluminum mixture:

Some time ago I read with interest your article. "Mend your own tinware." As I know how hard it is to mend aluminum I was anxious to learn more about soldering.

The other day I found the enclosed clipping in an auto-supply catalog. I find that Reparall works about as you described solderine. One stick of this metal cost me 68 cents at the Western Auto Supply Co., Wichita.

There is no name nor address of the manufacturers of it. Lloyd V. Decker.

Hill Grove Farm, Wichita, Kan., June 26, 1922.

I have endeavored in the clipping below to give some of my own suggestions in brackets, as you will notice. Now, whether this sulphur-aluminum mixture will stand 600 degrees of heat or not I am unable to determine; and, what is still more important, will it last? Perhaps somebody will be able to inform me later on.

REPARALL METAL.

The Metallurgical Marvel

Here is one of the greatest inventions in years for repairing cracks or breaks in any kind of metal—iron, bronze, brass, aluminum, copper, zinc, etc. Cracks in auto parts such as cylinder heads, crank cases, radiators, etc., which formerly had to be repaired by brazing or welding can now be repaired by anyone in a few minutes with Reparall Metal. To use simply heat the crack with a small torch to 250° (only a little above the boiling point of water) then rub a stick of Reparall Metal into the crack where it fluxates perfectly and practically becomes a part of the metal, regardless of the kind of material being repaired [not true]. The repair with this metal will then withstand 600° heat (much hotter than an automobile ever gets) and 1200 lbs. pressure which is more than ample. No acids or salts necessary; so

simple that anyone can use it. Articles can be mended from the bottom or sides as well as from the top because the heat will draw the Reparall Metal right into the crack [true, because it is sulphur, and not a metal]. Now used by thousands of garages and endorsed and used by the U. S. Government Aviation Repair Dept. on Airplane Motors. Fine for repairing most any sort of household utensils. An investment of 85c may save you as many dollars. Absolutely guaranteed. [Guaranteed, but by whom?] Shipping weight about 1 lb. Regular price \$1.50. Our cash price per package, 85c.

The aluminum dust I have mentioned costs \$1.00 a pound, and the sulphur 10 to 15 cents; so the mixture costs less than 75 cents a pound. Now, the little stick I bought on the fairground cost me 25 cents, and weighed only $\frac{1}{4}$ of an ounce, for both aluminum and sulphur are very light. How is that for profit—\$1.00 an ounce for something that cost less than \$1.00 a pound?

Blueberries in Florida.

(Continued from page 471, July issue.)

The writer of the above not only returned my dollar but he sent me three quite good-sized plants or trees as samples. These samples pleased me so well I sent the dollar back, and he replied as follows:

Your letters and money received O. K. Many thanks for same. I live just one-fourth mile from Mr. M. A. Sapp. He is a good man and has been in the berry business for 20 or more years. He put out two acres of trees last week; all came from the woods. Blueberry trees respond to common fertilizer finely. Mr. Sapp raises quite a lot of truck between the rows in his young orchards. His last year's blueberry planting is in cabbage now ready for market and they surely are fine.

I don't care to ship any more this season, but will be able to take care of all orders by Dec. 1, 1922. Any thing you may publish about what I have written is all right with me, for I believe you want to treat the people right. We have lots of low-bush blueberries also. They grow on upland.

W. C. Carver.
Rt. 1, Crestview, Fla., Mar. 10, 1922.

The two letters above would seem to indicate that no nurseryman in Florida sends out trees that are nursery-grown. The labels attached to the three plants mentioned were furnished by the Department of Agriculture, and they announced that these trees were free from inspection rules because they came direct from the forest. About the last of May Ernest and myself had the pleasure of visiting the writer of the above letters at the home of Mr. Sapp, mention of whom was made last fall, and going over his 20 acres of blueberry trees. I think I might call them trees, because the plantation was more like an orchard than a berry field. The blueberry bushes branch out much like my northern currants, but I think that some of them must be eight or ten feet high. Almost every little branch all over the twenty-acre orchard was bending with green berries; in fact, I never saw such a quantity of fruit on any tree or bush as I saw on those blueberries. It seemed to me as if some of them would have to drop off before maturity, for there was hardly room for the foliage. With much interest I visited the two acres just put out this past spring. The plants taken from the woods were cut square

off at about three feet high so that they looked more like clubs than trees, and the roots were pruned in much the same way. I think they were set some eight or ten feet apart. They were planted about March 1, and in the 60 days almost every club or stub had started to grow. Some of them, I think, had made a growth of a foot, and not more than one in a hundred had entirely failed.

Now, Mr. Sapp's wonderful success, it seems to me, is due to at least three things: He has a wonderful soil; in fact, he grows vegetables between the rows when the trees are small. Then he has a wonderful plant for producing luscious berries; and, last of all, he is a wonderful man. I asked him if he had any boys so his success would not die when he did. I think he said he had three or four. Now I am interested in finding out whether the blueberry does as well in other places and grows as big as it does for Mr. Sapp. There is something peculiar about that locality, I feel sure, for I saw the most wonderful fig trees with a mass of foliage, covered with a luxuriant growth, and bearing annually great crops of fruit. I think some \$30 to \$40 worth of figs had been sold from a single tree in one season. In the vicinity of Crestview there are only two kinds of blueberries mentioned. The one that is such a success in bearing large fine berries is called the "Rabbitseye," as mentioned above. The other is a little black berry growing also in the woods; but the berries are small and have but little value compared with the large blueberries. While the New Jersey blueberries must have an acid soil this rule does not seem to apply, so far as I can learn, to the blueberries of Walton County, Fla. My good friend Carver has sent me a sample of the berries by express; but they were so very ripe that they were considerably mashed on the way; and while they compare well with our northern swamp-grown huckleberries, they were far from being equal to the improved Jersey berries. The latter have been improved by selection so that the seeds are so small that they are hardly noticed; whereas the Florida berries have quite a number of seeds large enough to be more or less objectionable. The Department of Agriculture has already made mention of Mr. Sapp's work in some of its bulletins.

PATENTS Practice in Patent Office and Court.
Pat. Counsel of The A. I. Root Co.
CHAS. J. WILLIAMSON,
McLachlan Bldg., Washington, D. C.

ROOT QUALITY BEES AND BEEKEEPERS' SUPPLIES.

Bees in the hive, in packages, and nuclei, three-banded leather-colored Italian queens. Let a beekeeper of long standing serve you in your requirements for 1922. Catalog on request.

O. G. RAWSON,
3208 Forest Place, East St. Louis, Illinois.

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Notices will be inserted in these classified columns for 50c per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column, or we will not be responsible for errors. For special conditions on bee and queen advertising, please write us. Copy should be received by 15th of preceding month to insure insertion.

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(Temporary advertisers and advertisers of small lots, when discontinued, are not here listed. It is only regular advertisers of regular lines who are here listed when their advertisements are discontinued when they are in good standing.)

Ward Lamkin, Joe C. Weaver, Hickory Shade Apiary, H. N. Boley, Prof. W. A. Matheny, E. J. Beridon, Jr., T. W. Livingston, Van's Honey Farm, Jensen's Apiaries, M. S. Nordan, J. I. Banks, D. A. Davis, L. F. Miller, Marugg Co., The Aladdin Co., Southland Apiaries.

HONEY AND WAX FOR SALE.

FOR SALE—Clover, amber and buckwheat honey. 60-lb. cans and 5 and 10 lb. pails. C. J. Baldridge, Kendal, N. Y.

FOR SALE—25 tons fine extracted white clover honey at 12c. Comb honey prices on request. Dr. E. Kohn & Son, Grover Hill, Ohio.

FOR SALE—White, amber and buckwheat honey, in 60-lb. cans and 5 and 10 lb. pails. Write for prices. E. L. Lane, Trumansburg, N. Y.

FOR SALE—Choice clover extracted honey, packed in new 60-lb. cans. Write for prices, stating quantity desired. J. D. Beals, Oto, Iowa.

FOR SALE—Choice new white clover honey in new 60-lb. cans, 120 lbs. net. \$16.00. Sample, 20c. Edw. A. Winkler, Joliet, R. F. D. No. 1, Ill.

FOR SALE—Extracted white clover honey. 1922 crop, new tins, two 60-lb. cans to case, at \$15.00 per case. J. G. Burtis, Marietta, N. Y.

FOR SALE—12,000 lbs. of choice white clover honey, well ripened, put up in new 5 and 10 lb. pails. Sample 25c. W. B. Wallin, Brooksville, Ky.

FOR SALE—A1 diamond clear extracted sweet clover honey, 10 1/2c per lb., f. o. b. Moville, Iowa. In new 60-lb. cans. Virgil Weaver, Box 311, Moville, Iowa.

FOR SALE—White honey in 60-lb. cans, also West Indian in 50-gal. barrels. Samples and price on request. A. I. Root Co., 23 Leonard St., New York City.

FOR SALE—White clover honey in 60-lb. cans and 5-lb. pails, this year's crop, none better. Write for prices. Sample, 10c. F. W. Summerfield, Waverly, Ohio.

FOR SALE—Several tons of dark and amber extracted honey for baking, etc., in barrels and 60-lb. cans; comb honey in season. H. G. Quirin, Bellevue, Ohio.

FOR SALE—50,000 lbs. extra fancy white clover honey. Price, one 60-lb. can, 16c a lb.; two 60-lb. cans, 15c a lb. Sample bottle by mail, 10c. J. M. Gingerich, Kalona, Iowa.

RASPBERRY HONEY—In 60-lb. cans, 2 in a case for \$14.40; one in a case, \$7.50. Sample by mail, 20c, which may be applied on order for honey. Elmer Hutchinson & Son, Lake City, Mich.

HONEY FOR SALE—In 60-lb. tins, water-white orange, 15c; white sage, 14c; extra L. A. sage, 12c; buckwheat, 10c, etc. Hoffmann & Hauck, Woodhaven, N. Y.

OUR 1922 crop extracted honey is a very fancy grade, water white clover, which was left on the hives until thoroughly cured by the bees before extracting, making it very heavy bodied. This thick, rich honey is all packed in new 60-lb. cans, two to the case. Of course, we have to ask a little more for honey of this quality than ordinary honey. When in need of a good article, send a dime for a sample, and address your inquiry to D. R. Townsend, Northstar, Mich.

FOR SALE—We can supply honey to beekeepers or other roadside sellers who may need to buy beyond their own supply, packed as follows: 2 1/2-lb. friction top tin cans, 2 doz. in case; 5-lb. friction top tin cans, 1 dozen in case; 10-lb. friction top tin cans, 1/2 doz. in case; 60-lb. square cans, 1 to case; 60-lb. square cans, 2 to case. We have the following kinds of honey: Standard white, alfalfa, sweet clover, California sage, California orange, light amber, amber. Write for prices. The A. I. Root Co., Medina, Ohio.

FOR SALE—Our 1922 crop of white clover extracted honey, put up in new 60-lb. cans and cases. Stored by the bees in nice new white combs, above excluders. The entire crop left upon the hives until some time after the close of the clover flow. By buying our honey you get our 47 years' experience in the production of honey. You may be able to buy cheaper honey, but what about quality? We are offering our new crop clover extracted honey as long as it lasts, at the following prices: One to five cases at 14c per pound, 5 cases or more, 13c per pound, on track here at Northstar. Address with remittance, E. D. Townsend & Sons, Northstar, Michigan.

HONEY AND WAX WANTED.

WANTED—Honey, section, bulk comb and extracted. Elton Warner, Asheville, N. C.

WANTED—Honey in ton lots, comb and extracted, of all kinds. Joe Mlinarits, 8927 Keller St., Detroit, Mich.

WANTED—Bulk comb and section honey. Correspondence solicited. J. E. Harris, Morristown, Tenn.

BEEWAX WANTED—For manufacture into SUPERIOR FOUNDATION. (Weed Process.) Superior Honey Co., Ogden, Utah.

WANTED—Shipments of old combs and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

WANTED—Beeswax. We are paying 1c and 2c extra for choice yellow beeswax and in exchange for supplies we can offer a still better price. Be sure your shipment bears your name and address so we can identify it immediately upon arrival, and make prompt remittance. The A. I. Root Co., Medina, Ohio.

FOR SALE.

HONEY LABELS—New design. Catalog free. Eastern Label Co., Clintonville, Conn.

FOR SALE—Good second-hand 60-lb. cans, two cans to case, boxed, at 60c per case. f. o. b. Cincinnati. Terms cash. C. H. W. Weber & Co., Cincinnati, Ohio.

FOR SALE—About 35 cases, 70 cans, used 60-lb. cans in wood reshipping cases, 50c per case, f. o. b. New York City. E. A. Scott, 1057 Grand Concourse, New York City.

HONEY cans and pails; new sixties, 50 cases at 91c per case two cans. The Stover Apiaries, Mayhew, Miss.

FOR SALE—Five Townsend uncapping tanks. Price, complete, \$27.50 each. The A. I. Root Co., Medina, Ohio.

FOR SALE—"SUPERIOR" FOUNDATION, "quality unexcelled." Let us prove it. Order now. Superior Honey Co., Ogden, Utah.

PORTER BEE-ESCAPES save honey, time and money. For sale by all dealers in bee supplies. R. & E. C. Porter, Lewiston, Ill.

FOR SALE—Honey cans. 100 cans in cases, 2 5-gal. square cans to case, \$1.00 per case. Used once. Good as new. L. N. Gravely, Ringgold, Ga.

SEND for our bargain list of new bee supplies, hives, frames, bottoms, covers, sections, shipping cases, almost everything you want. Some at 50% discount. The Stover Apiaries, Mayhew, Miss.

WANTS AND EXCHANGE.

WANTED—Second-hand honey extractor. Miss Polly M. Scott, Upper Troy, N. Y.

ROYAL typewriter, \$65.00. Will trade for honey, queens or offer. E. A. Harris, Albany, Ala.

WANTED—Small second-hand honey extractor. C. B. Thwing, 45 W. Tulpehocken St., Philadelphia, Pa.

WANTED—One hand, one power honey extractor, and other bee equipment. Ed Mrovka, Collinsville, Ill.

WANTED—Italian bees in Standard hives, 10-frame, on good 80 acres of land. M. B. Lund; Henning, Minn.

WANTED—Old combs and cappings for rendering on shares. Our steam equipment secures all the wax. Superior Honey Co., Ogden, Utah.

BEESWAX wanted. Old combs (dry) and cappings for rendering. Also wax accepted in trade. Top market prices offered. A. I. Root Co. of Iowa, Council Bluffs, Iowa.

OLD COMBS, cappings or slumgum wanted for rendering by steam press process. We pay cash for wax rendered, trade for supplies, or work it into foundation. W. T. Falconer Mfg. Co., Falconer, N. Y.

BEESWAX WANTED—We need large quantities of beeswax and are paying good prices now. Ship to us at Hamilton, Ill., or Keokuk, Iowa, or drop us a card and we will quote f. o. b. here or f. o. b. your own station, as you may desire. Dadant & Sons, Hamilton, Ill.

OLD COMBS WANTED—Our steam waxes will get every ounce of beeswax out of old combs, cappings or slumgum. Send for our terms and our 1922 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Son, Hamilton, Ill.

BEES AND QUEENS.

HARDY Italian queens, \$1.00 each. W. G. Lauver, Middletown, Pa.

WHEN it's GOLDEN, it's PHELPS. C. W. Phelps & Son, Binghamton, N. Y.

FOR SALE—Italian queens, nuclei and packages. B. F. Kindig, E. Lansing, Mich.

SEE Thagard's latest reduced prices on queens in ad elsewhere.

REQUEEN with SIMMONS' QUEENS. Prices reduced. Fairmount Apiary, Livingston, N. Y.

SPECIAL prices on queens. See my ad page 555. Frank Bornhoffer, Mt. Washington, Ohio.

TRY ACHORD'S BEES and QUEENS. Price list by return mail. W. D. Achord, Fitzpatrick, Ala.

FOR SALE—20 colonies Italians. Write for particulars at once. J. B. Scudder, Trenton, R. D. No. 6, N. J.

WHEN it's quality, service and satisfaction you want to try Pinard. A. J. Pinard, 440 N. 6th St., San Jose, Calif.

FOR SALE—Three-banded Italian queens. Tested, after June 15, \$2.00 each. J. D. Kroha, 87 North St., Danbury, Conn.

AM now ready to send queens by return mail. Dr. Miller's strain, \$1.00 each. S. G. Crocker, Jr., Roland Park, Baltimore, Md.

3-BANDED ITALIAN QUEENS. Untested, 90c each; tested, \$1.40 each; satisfaction and no disease guaranteed. J. J. Scott, Crowville, La.

PHELPS GOLDEN QUEENS will please you. Mated, \$2.00; 6, \$10.00; or \$18.00 a doz. C. W. Phelps & Son, Binghamton, N. Y.

TWO-POUND package bees with untested Italian queen, \$5.00; 3 lbs., \$7.00. Safe delivery guaranteed. C. H. Cobb, Belleville, Ark.

PRITCHARD QUEENS are the result of years of careful breeding and selection. See ad page 554. Arlie Pritchard, Medina, Ohio.

FOR SALE—Bright Italian queens, 1, \$1.00; 12, \$10.00; 100, \$75.00. Safe arrival guaranteed. T. J. Talley, Greenville, R. D. No. 3, Ala.

PACKAGE BEES—\$1.50 per pound. Untested Italian or Carniolan queens, \$1.25 each. Circular free. J. E. Wing, 155 Schiele Ave., San Jose, Calif.

FOR SALE—Golden Italian queens, 1 untested, \$1.00; 6 for \$5.00; tested, \$2.00; hybrids, 3 for \$1.00. J. F. Michael, Winchester, R. D. No. 1, Ind.

TRY our northern-bred leather-colored Italian queens for European foul brood at \$1.25 each; 6, \$7.00; 12, \$13.50. Charles Stewart, Johnstown, N. Y.

FOR SALE—July 1, Buck Goldens. 1 queen, \$1.00; 6 queens, \$5.00; 12 queens, \$10.00; virgins, 40c. W. W. Talley, R. D. No. 4, Greenville, Ala.

FOR SALE—Early package bees, nuclei and queens. We handle 1800 colonies. Shipping season March 1 to June 1. Loveitt Honey Co., Phoenix, Ariz.

SELECT DAY-OLD QUEENS. 10, \$4.00, in Thompson safety cages; Benton, 5c less. Untested, \$1.25. Superior Italian stock. James McKee, Riverside, Calif.

DEPENDABLE QUEENS—Golden or three-banded: 1, \$1.25; 6, \$7.00; 12, \$13. Safe arrival and satisfaction guaranteed. Send for circular. Ross B. Scott, La Grange, Ind.

BIG SAVING on select three-banded Italian queens, gentle, prolific and hustlers. Second to none. One, 85c; 6 for \$4.25; 12, \$8.00. Ship all orders within 24 hours. J. L. Morgan, Gen. Mgr. Tupelo Honey Co., Columbia, Ala.

FOR SALE—Italian queen untested, \$1.25 each; 6 for \$7.00; 12 for \$13.50; tested, \$2.00 each. Bees by the pound shipped by express, one-pound package with queen, \$5.75; two-pound package with queen, \$7.50. Safe delivery and satisfaction guaranteed. R. B. Grout, Jamaica, Vt.

FOR SALE—Three-banded Italian queens, untested, \$1.00 each; 6, \$5.50. Ready now. Satisfaction guaranteed. Chas. W. Zweily, Willow Springs, Ill.

FOR SALE—My 1922 golden queens, the big yellow kind, none better. Satisfaction guaranteed. Price 90c each, or \$9.00 per dozen. E. F. Day, Honoraville, Ala.

QUEENS—For summer and fall. Write for prices and guarantee, state quantity desired and when shipment wanted. I can fill your orders. J. L. St. Romain, Hamburg, La.

WE ARE booking orders now for spring delivery for the famous "Colorado Queens." Send your order early so as to be sure to get your queens. C. I. Goodrich, Wheatridge, Colo.

ELTON WARNER'S QUALITY QUEENS—Progeny of his famous Porto Rican breeding stock. Write for price list. 20% off after June 30. Elton Warner Apiaries, Asheville, N. C.

FOR SALE—Three-band Italian queens, select untested, \$1.00 each; \$9.00 per doz. 2-lb. package with queen, \$5.00. Satisfaction guaranteed. W. T. Perdue & Sons, Fort Deposit, Ala.

BEES BY THE POUND — Also **QUEENS**. Booking orders now. FREE circulars, giving details. See larger ad elsewhere. Nueces County Apiaries, Calallen, Texas. E. B. Ault, Prop.

TRY MY CAUCASIAN OR ITALIAN three-frame nuclei at \$5.00 each, with untested queen. Tested, \$1.50; untested, \$1.00, of either kind. No disease. Peter Schaffhauser, Havelock, N. Car.

FOR SALE—Golden Italian queen, untested, \$1.00; 6 for \$5.40; 12 or more, 80c each; tested, \$1.50 each; select tested, \$2.50 each. Safe arrival guaranteed. Sam Hinshaw, Randleman, N. C.

GOLDEN QUEENS that produce large beautiful bees, solid yellow to tip, very gentle and prolific. Untested, \$1.25 each; select tested, \$3.00 each; breeders, tested, \$5.00. Dr. White Bee Co., Sandia, Texas.

FOR SALE—Leather-colored Italian queens, tested, until June 1, \$2.50, after \$2.00. Untested, \$1.25; 12, \$13.00. **ROOT'S GOODS, ROOT'S PRICES**. A. W. Yates, 15 Chapman St., Hartford, Conn.

WARRANTED PURE-MATED Italian queens in special sure introducing cages; first order, \$1.25 each. 30 years' experience in queen-rearing. No honey in queen candy. Daniel Danielson, Brush, Colo.

YOUR last chance this year to get the best queens obtainable. Our new method produces queens equalled by none. Circular free. Untested, \$1.00; tested, \$2.00. F. M. Russell, Roxbury, Ohio.

FOR SALE—Three-banded Italian queens, untested, 1, \$1.00; 12, \$9.00; 100, \$70.00. Tested, 1, \$1.50; 12, \$16.00. No disease, safe arrival, satisfaction and purely mated. W. C. Smith & Co., Calhoun, Ala.

FOR SALE—350 colonies of bees with complete extracting equipment, including power extractor, steam boiler, and auto truck, with or without 1922 crop. Scott McClanahan, Parma, R. D. No. 1, Idaho.

POOLE'S Italian queens will please you. Give me a trial and be convinced. I guarantee safe arrival and satisfaction. Untested, 85c each; 12 or more, 75c each; tested, \$2.00 each. Rufus Poole, Greenville, Ala.

IF GOOD bright Italian queens are wanted by return mail, send your order to M. Bates, Greenville, Ala. Price, \$1.00 each; \$10.00 per dozen; \$75 per 100. Pure mating, safe arrival and satisfaction guaranteed.

"**SHE-SUITS-ME**" queens, line-bred Italians, \$1.50 each; 10 to 24, \$1.30 each. See back cover of January number. Allen Latham, Norwichtown, Conn.

COLORADO HEADQUARTERS for **QUEENS**—Northern-bred leather-colored three-band Italians. Safe arrival guaranteed. Send for circular and price list. Loveland Honey & Mercantile Co., Loveland, Colo.

FOR SALE—Pinard's quality of Root's strain of bees and queens. Virgins, 50c. Untested queens, \$1.25 each. Larger lots write. Circular free. After July 1, 10% discount. A. J. Pinard, 440 N. 6th St., San Jose, Calif.

FOR SALE—Golden Italian queens, untested, \$1.00; 6 for \$5.40; 12 or more, 80c each; tested, \$1.40 each. Good honey-gatherers, hardy and gentle. No disease. Safe arrival. Hazel V. Bonkemeyer, Randleman, R. D. No. 2, N. C.

FOR SALE—Some 65 colonies of bees in 10-frame hives with complete equipment, plenty of extra brood-frames and super combs. No disease. Very reasonable. Will Loge, R. F. D. No. 1, Box No. 357, Milwaukee, Sta. D., Wisc.

BRIGHT ITALIAN QUEENS, \$1.00 each, 10% less in dozen lots. Pure mating, safe arrival and reasonable satisfaction guaranteed in U. S. and Canada. Write us for prices on package bees. We have them in season. Graydon Bros., Rt. 4. Greenville, Ala.

HEAD your colonies with Williams' Italian queens of quality and get more pleasure and profit from your bees. They produce bees that are gentle, hardy and hustling. Descriptive circular free. Select untested, 75c each. P. M. Williams, Ft. Deposit, Ala.

SPICER'S three-band Italian queens by return mail. If you are interested in improving your stock and getting larger returns from your bees, head your colonies with these queens. Untested, \$1.00; 6, \$5.50; 12, \$10.00; tested, \$2.00 each. Robt. B. Spicer, Wharton, N. J.

FOR SALE—**DEPENDABLE GOLDEN ITALIAN QUEENS** add beauty to your bee quality. Virgins, 60c; 5 for \$2.50; untested, \$1.00; 6 for \$5.00; select untested, \$1.50; 6 for \$6.50; tested, \$2.50; 5 for \$10.00; selected, \$3.00; breeders, \$5.00. Safe arrival and quality guaranteed. S. H. Hailey, Pinson, Tenn.

BALANCE of season we will furnish a 2-lb. package of our three-banded hustlers with a select untested queen for \$4.75; 25 or more, \$4.50 each. Select untested queens from our best breeders, \$1.00 each; \$10.00 per doz. Tested, \$1.50 each; \$15.00 per doz. Caney Valley Apiaries. J. D. Yankey, Mgr., Bay City, Texas.

FOR SALE—Golden Italian queens and bees, untested, 1 queen, \$1.00; 1 dozen, \$10.00; 100, \$75.00. 2-lb. package with queen, \$5.00; 1-lb. package with queen, \$3.00; 12 or more, 5% off. 2-frame nucleus with queen, \$5.00; 15 or more, 5% off. Safe arrival and satisfaction guaranteed. J. F. Rogers, Greenville, R. D. No. 3, Ala.

CONNECTICUT QUEENS, highest grade three-banded Italians. Untested, \$1.00 each; 6, \$5.50; 12, \$10; 50, \$40; 100, \$75. Two lbs. of bees with queens, \$4.00; 3 lbs. with queen, \$6.00. Day-old virgin queens, 40c each; 3 for \$1.00. First-class stock and satisfaction guaranteed. No disease here. Conn Valley Apiaries, A. E. Crandall, Berlin, Conn.

FOR SALE—Golden Italian queens—good queens at low price. Untested, \$1.00; 6 for \$5.40; 12 or more, 80c each; tested, \$1.50 each; select tested, \$2.50 each. No disease of any kind. Bees very gentle and good honey-gatherers, not apt to swarm unless crowded for room. 18 years a queen-breeder. D. T. Gaster, Randleman, R. D. No. 2, N. C.

SPECIAL REDUCED PRICES on Italian queens for August and September. Untested, 1, \$1.00; 6, \$5.75; 12, \$11.00; 50, \$45.00; 100, \$85.00. Tested, 1, \$2.00; 6, \$11.00. The place where you get the best: J. D. Harrah, R. F. D., No. 1, Free-water, Oregon.

FOR SALE—40 colonies of Italian bees in 8-frame Jumbo hives, all in good condition, no disease. Also 3-4 supers to each with good drawn frames, at very low price. Have to move same this fall. R. A. Rojahn, 1050 Desplaines Ave., Forest Park, Ill.

TESTED QUEENS—One-year-old tested three-banded Italian queens, descended from the famous Moore strain. Were reared in full colonies and are very fine queens. Price, \$1.50 each; 6 for \$8.50; 12 for \$16.00. Safe arrival and satisfaction guaranteed. Elmer Hutchinson & Son, Lake City, Mich.

GOLDEN ITALIAN QUEENS—Bred from finest strain in U. S. Mated to select drones. **THEY POSSESS THE QUALITIES WHICH MAKE BEEKEEPING PROFITABLE.** Untested, 75¢; dozen, \$7.50; virgins, 25¢; tested, \$1.50. Safe arrival and satisfaction guaranteed. Crenshaw County Apiary, Rutledge, Ala.

ITALIAN QUEENS—Three-banded, select untested, guaranteed. Queen and drone mothers are chosen from colonies noted for honey production, hardiness, prolificness, gentleness and perfect markings. Price, \$1.25 each, 12, \$1.00 each. Special prices on larger orders. Send for circulars. J. H. Haughey Co., Berrien Springs, Mich.

PHELPS' GOLDEN ITALIAN QUEENS combine the qualities you want. They are GREAT HONEY-GATHERERS, BEAUTIFUL and GENTLE. Virgins, \$1.00; mated, \$2.00; 6 for \$10.00, or \$18.00 per doz.; tested, \$5.00. Breeders, \$10.00 to \$20. Safe arrival guaranteed only in the U. S. and Canada. C. W. Phelps & Son, Binghamton, N. Y.

HOLLOPETER'S ITALIAN QUEENS are bred up to a standard and not down to a price, yet price is low where quality and service count. Select untested each, \$1.25; 6, \$7.00; 12, \$13.00; 25, \$25.00. Write for mailing date and price on larger lots for requeening. Pure mating, no disease, safe arrival and satisfaction guaranteed. J. B. Hollopeter, Rockton, Pa.

FOR SALE—170 colonies of high-class Italian bees in modern 10-frame L. hives, painted, full sheets, wired. About 50 colonies in Jumbo hives, all first-class equipment for comb, extracted honey and queen-rearing. Four-colony winter cases. Clover-basswood location. Fine home market. Information on request. Come and see. E. L. Hall, 1706 Forres Ave., St. Joseph, Mich.

I EXPECT to be ready to start shipping 3-lb. packages of bees with 1 frame, 1 untested queen at \$6.00; 2-frame nuclei with untested queen, \$4.50, about April 15. Young tested queen, 50¢ extra, or \$1.50 each. I think I was the second to ship packages of bees from this state and know how to serve customers. F. M. Morgan, Hamburg, La.

CALIFORNIA QUEENS—100% perfect, large vigorous Italians, guaranteed layers. They are making a hit as proven by repeated orders and letters of appreciation. Am building a name and reputation. Try at least one. You will surely want more then. Price reduced. Select untested, 1, \$1.00; 6, \$5.50; 25, 90¢ each. H. Peterman, R. F. D., Lathrop, Calif.

LARGE, HARDY, PROLIFIC QUEENS—Three-band Italian and Goldens. Pure mating and safe arrival guaranteed. We ship only queens that are top notchers in size, prolificness and color. Prices as follows: Untested, \$1.25 each; 6 for \$7.00; select untested, \$1.50 each; 6 for \$8.50; select tested, \$3.00 each. Special prices on larger quantities. Queens clipped free on request. Health certificate with each shipment. Buckeye Queens. Zoarville, Ohio.

LAST fall I had selected and tested six queens. Will use them as breeders this season in my queen yard. Their surplus honey capacity is from 216 lbs. to 288 lbs. each. I guarantee that every queen bought of me in 1922 is to be the daughter of one of these queens. Bees are three-banded. Mated, in June, \$1.25 each; 6, \$7.00; 12, \$13.50; 25 or more, \$1.00 each. After July 1, \$1.00 each straight. Julius Victor, Martinsville, N. Y.

FOR SALE—250 to 350 colonies of fine Italian bees on good straight L combs with a full equipment of supplies for extracted-honey production. Also 47 acres land in Harrison County, Iowa, near town; has about 20 acres fine natural basswood grove. Has good improvements, especially for bee-keeping. Probably as good an equipment as there is in the state. This is a good paying business, with outyards already established, everything complete. Can give long time on part of the price, but would require \$8000 or \$9000 to swing it. Any one having that much capital to invest in a dandy country home and a paying business, will find it by addressing E. S. Miles & Son, Dunlap, Iowa.

3-BANDED (Dr. Miller and my own stock) queens for fall requeening at a bargain in 100 lots. Ask these men, any one of them, or all of them: Such as Amos Burhans, Waterloo, Ia.; Porter C. Ward, Allensville, Ky.; Ed Bradley, Trenton, Ky.; B. I. Blankenship, Crab Orchard, Ky.; R. N. Wood, Winton, Calif.; F. A. James, Clover Seed Co., Newbern, Ala.; Dadant & Sons, C. H. W. Weber & Co., with many others; yes, and Mr. Stephen J. Harmeling & Son, Vashon, Wash. 1 queen, \$1; 6 for \$5.50; 12 for \$10. Health certificate, pure mating and safe arrival guaranteed. Curd Walker, Scotts Sta., Ala.

\$200.00 FOR ONE QUEEN. This is what we value her at, although she is not for sale at any price. This is the queen that produced 577 sections of comb honey for C. B. Hamilton of Michigan last year, beginning the season with a two-pound package of bees (see Gleanings for March, page 167; also July, 425). We are now filling orders for young queens raised from this wonderful queen at the following prices: 1 untested, \$1.25; 12, \$12.00; 1 select untested, \$1.50; 12, \$15.00; 1 tested, \$2.00; 12, \$20.00; 1 select tested, \$2.50; 12, \$25.00. Queens from other breeders, 1 untested, \$1.00; 12, \$10.00; 1 select untested, \$1.25; 12, \$13.50; 1 tested, \$1.75; 12, \$16.00; 1 select tested, \$2.25; 12, \$20.00. Safe arrival and satisfaction guaranteed. Write for prices on quantities. No disease. J. M. Cutts & Son, R. D. No. 1, Montgomery, Ala.

MISCELLANEOUS.

MEDICINAL roots and herbs are very profitable to grow. We especially recommend growing Golden Seal which with good care will yield as high as \$10,000 per acre for each crop. It takes several years to mature but will average \$1000 a year. Special Crops, a monthly paper, tells how. Sample copy, 10¢. \$1.00 per year. Address Special Crops Pub. Co., Box "G," Skaneateles, N. Y.

HELP WANTED.

WANTED—Situation by experienced florist and beekeeper as assistant, any reasonable salary. California or South preferred. Wm. Robinson, Winona Lake, Box 70, Indiana.

MASON BEE SUPPLY COMPANY,
Mechanic Falls, Maine.
From 1897 to 1922 the Northeastern Branch of
The A. I. Root Company.
PROMPT AND EFFICIENT SERVICE
BECAUSE—Only Root's Goods are sold.
It is a business with us—not a side line.
Eight mails daily—Two lines of railway.
If you have not received 1922 catalog send name
at once.

Requeen Now If You Can!

Right now is the time to begin your plans for securing the maximum crop of honey next season.

Requeening with young, prolific queens of a known, honey-gathering strain is one of the most important factors in being a successful honey producer. Young, prolific queens introduced now will mean two things: First, strong colonies to go into winter quarters. Second, strong colonies to gather next season's crop of honey.

For more than 50 years we have been breeding up to the Root Quality Queens and Bees. We do not believe that better bees or queens are reared anywhere in the world today. What we try to do, is to rear THE BEST.

We breed queens with special view to the honey-gathering quality of their bees. We have had this one chief purpose in breeding constantly in mind all these years. We have it uppermost in our minds today.

THE DIFFERENT GRADES OF QUEENS.

Italian queens are distinguished from blacks by three yellow bands on the upper part of the abdomen. Leather-colored Italians show three stripes of dark-yellow leather color.

An untested queen is one which is sold after she is found to be laying, not having been previously tested.

A tested leather-colored queen is one which has been examined by the breeder and her bees found to be uniformly marked with at least three dark-yellow bands.

Select queens of any of the grades are those which show better color, size, shape, etc. Frequently select untested queens develop into fine breeding queens.

PRICE OF QUEENS—Up to October 1.

	1 to 9.	10 to 24.	25 to 49.	50 to 99.	100 or more.
C312000—Untested	.....\$1.50 each.	\$1.40 each.	\$1.35 each.	\$1.25 each.	\$1.15 each.
C313000—Select Untested	....2.00 each.	1.90 each.	1.80 each.	1.70 each.	1.60 each.
C314000—Tested	.....2.50 each.	2.35 each.	2.25 each.	2.10 each.	2.00 each.
C315000—Select Tested	....3.00 each.	2.85 each.	2.70 each.	2.25 each.	2.40 each.

Note the large saving to be made by taking advantage of our low prices on quantity lots.

OUR GUARANTEE ON QUEENS.—We guarantee safe arrival of queens sent in mailing cages. We agree to refund the money or replace the queen if the one first sent arrives dead; provided the beekeeper receiving the dead or unfit queen returns her at once and in her own shipping cage, properly marked with name and address of sender. No delay in returning the queen can be permitted. This guarantee applies only on queens sent to customers in the United States and Canada.

PRICES OF BEES IN COMBLESS PACKAGES BY EXPRESS.

Up to August 15.

C310700—1-pound package	.....\$3.00; 25 or more packages, \$2.85 each.
C310800—2-pound package	.....5.00; 25 or more packages, 4.75 each.
C310801—3-pound package	.....7.00; 25 or more packages, 6.60 each.

Add price of queen wanted to package price given above.

OUR GUARANTEE ON BEES SHIPPED BY EXPRESS.—We agree to make good any loss to bees in transit, provided consignee secures such notation as will cover any apparent damage done while in transit, on express delivery receipt, signed in full by express agent, receipt to be mailed to us at once with letter giving full particulars, on receipt of which replacement will be made immediately. The guarantee does not apply on bees shipped to foreign countries.

Mail all queen and bee orders direct to Medina or to our nearest branch office.

THE A. I. ROOT COMPANY
WEST SIDE STATION MEDINA, OHIO, U. S. A.

Requeen Now!

While you can get good queens cheap, L. L. Forehand's Queens are backed by twenty years of careful selecting and breeding. They are bred from the imported stock direct from Italy, the best in the world for honey-gathering, disease-resisting, prolificness, gentleness and non-swarming.

Give my queens a trial, and, if you are not entirely satisfied in every way, your money will be refunded.

Guarantee

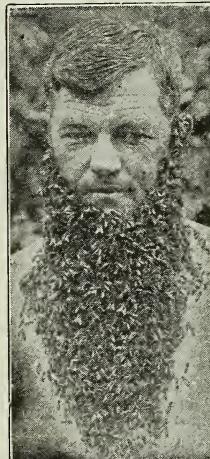
I guarantee every queen will reach you alive, to be in good condition, that she will be purely mated and give perfect satisfaction in every way. Safe delivery guaranteed in U. S. and Canada only.

	1	6	12
Untested	\$0.75	\$ 4.40	\$ 8.60
In hundred lots, \$67.00 per 100.			
Selected Untested	1.10	6.25	12.00
Tested	2.00	10.00	18.50
Selected Tested	2.75	15.00	27.00

If queens are wanted in larger quantities, write for special prices.

L. L. Forehand, Fort Deposit, Ala.

Prices for the Remainder of the Season



QUEENS

1 to 4 inclusive,
\$2.00 each

5 to 9 inclusive,
\$1.95 each

10 or more,
\$1.90 each

Breeders,
\$10.00 each

Introducing
Cages, 75c each

JAY SMITH
ROUTE THREE.
VINCENNES, INDIANA

PATENTS -- TRADEMARKS

I offer prompt, personal and expert professional service. 10 years' experience. Write for terms. LESTER SARGENT, Patent Attorney, 524 Tenth St., N. W., Washington, D. C.

Queens - Golden - Queens

Have you secured all you need? I have them as fine as you can secure anywhere at a reasonable price. Untested, \$1.00; six, \$5.50; 12, \$10. If they don't give you satisfaction and you write me, I will make it satisfactory to you.

E. A. SIMMONS, GREENVILLE, ALA.

QUEENS — QUEENS

LARGE, leather-colored 3-banded Italian queens; 10-years selection, bred for honey-gathering; gentle, hardy and long-lived. Price: Select untested, 1, \$1.25; 6, \$6.50; 12, \$12. After July 1: 1, \$1; 6, \$6; tested, \$1.50 each. Write for price on large orders. Free booklet, "How to Transfer. Get Honey and Increase."

J. M. GINGERICH, KALONA, IOWA.



Best Hand Lantern

A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog. **THE BEST LIGHT CO.**
306 E. 5th St., Canton, O.

REDUCED PRICES

Beginning July 1st, we will sell queens the balance of the season at the following prices:

Untested: One to 9, 90c each; 10 to 19, 80c each; 20 or more, 75c each. Tested: \$1.25 each. Three-banded Italians.

There are no better queens than these. They have again led the country in the amount of surplus honey stored.

MURRY & BROWN,

Mathis, Texas.

Send orders to H. D. Murry, Mathis, Texas.

MOTT'S NORTHERN-BRED ITALIAN QUEENS

Are all selected queens this season. After July 1st, \$1.00 each. Sel. Guaranteed pure mated, or replace free, \$1.50. Sel. Tested, \$2.50. Virgins, 60c each. Plans, "How to Introduce Queens" and "Increase," 25c.

E. E. MOTT, GLENWOOD, MICH.

Would exchange some of our queens for supplies for next year's supply. We need 10,000 queen cages, three-hole complete without candy, 1000 metal spaced Hoffman frames, 50 double-walled hives, 50 single-walled hives, 100 metal covered tops, 200 inner covers without bee-escape hole, 150 lbs. medium brood foundation. Everything must be new, and in the flat and in ten-frame standard equipment. Write and tell us what you have to offer.

W. G. Lauver, Middletown, Pa.

A-T-T-E-N-T-I-O-N!

OHIO AND WEST VIRGINIA BEEKEEPERS

We are most favorably located for serving Central, Southern and Eastern Ohio, and also West Virginia. No matter where you are, full stocks, best shipping facilities and prompt attention will insure satisfaction. Free catalog.

MOORE & PEIRCE

Zanesville, Ohio—"Beedom's Capital."

BARNES' HAND & FOOT POWER MACHINERY

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

Send for illustrated catalog and prices.

W. F. & JOHN BARNES CO.
545 Ruby Street
ROCKFORD, ILLINOIS.



NEWMAN'S QUEENS

Originated from the world-famous Moore strain of Italians. Absolutely first quality and fully guaranteed, no disease. Satisfaction and safe arrival.

Untested: 1, \$1.25; 6, \$6.00; 12, \$11.00.
Sel. Unt.: 1, \$1.75; 6, \$8.00; 12, \$15.00.

Circular free.

A. H. NEWMAN, Queen-Breeder.
Morgan, Kentucky.

Merrill's Quality-Bred Italian Queens

Famous Three-banded and Golden Queens.

They are pleasing others; why not you? I sell good queens for less. Try them and see for yourself.

1 Untested Queen.....	\$0.75
6 Untested Queens.....	4.00
12 Untested Queens.....	8.00

These are selected queens, mated, and laying. Guaranteed to please you.

G. H. Merrill

Route 5.

GREENVILLE, S. C.

Goldens the Best

14 years in business should give you best queens possible. Untested, \$1, or 6 for \$5; in lots of 25 or more, 75c each. Virgins, 40c each, or 3 for \$1. Satisfaction and promptness my motto.

R. O. COX, Box 25, RUTLEDGE, ALABAMA.

NEW ENGLAND

Beekeepers will find a complete line of the best supplies here. Send in your order early and be ready for the harvest. Remember this is the shipping center of New England. Write for new catalog.

H. H. JEPSON

182 Friend Street.

BOSTON 14, MASS.

*Let us tell you about the California
Gold Medal Queens*

The Queens with the Pedigree.

Our hardy, immune, prolific strain of 3-banded leather-colored Italians. Developed from the world's best strains by careful selection and tested under California conditions for five years, with excellent results. My speciality will be breeding stock and every queen produced will receive my personal care and inspection. Now receiving orders for the season of 1922, which will be filled in the order of their receipt. Write for catalog and prices.

THE COLEMAN APIARIES

GEO. A. COLEMAN, Prop.
2649 Russell St., Berkeley, California.

INDIANOLA APIARY offers Italian Bees and Queens for following prices: Untested Queens, \$1.00 each; Tested Queens, \$1.50 each. Bees, per lb., \$2.00. Nucleus, \$2.00 per frame. No disease. Bees inspected.

J. W. SHERMAN,
Valdosta, Georgia.

3-Band Queens

That have cut down the cost of advertising, because they prove to our customers that they represent the BEST. That's why we can sell them at such low prices. Every queen guaranteed.

Untested, \$1.00; \$11.40 doz.; 25, 90c each. Select Unt., \$1.25; 13.50 doz.; 25, \$1 each. Select Tested, \$2.25; \$24.00 doz.

HERMAN McCONNELL
Robinson, Illinois.

QUEENS OF MOORE'S STRAIN

OF ITALIANS PRODUCE
WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardness, gentleness, etc. I am now filling orders by return mail. Untested queens \$1.25; 6, \$6.50; 12, \$12. Select Untested, \$1.50; 6, \$8.00; 12, \$15. Safe arrival and satisfaction guaranteed.

J. P. MOORE, Queen Breeder
Route 1, MORGAN, Kentucky.

75c EACH

One or more **SELECT** Untested Three-Banded Italian Queen. No poor-appearing queen will be sent. A satisfactory sale guaranteed. No disease.

D. W. HOWELL, SHELLMAN, GEORGIA.

QUEENS

OUR OLD RELIABLE THREE-BANDED ITALIANS ARE HONEY GETTERS.

They are gentle, prolific, and very resistant to foul brood. Orders booked for one-fourth cash. Safe arrival guaranteed. Circular free.

	1	6	12
Untested	\$1.00	\$5.50	\$10.00
Select Untested	1.25	6.50	12.50
Tested	2.25	12.50	24.00
Select Tested			\$3.00 each

See our Dec. and Jan. Advertisement.

JOHN G. MILLER

723 C Street, Corpus Christi, Texas.

QUIGLEY QUALITY

Italian Queens and Bees are produced by double grafting, producing queens of superior quality and long-lived bees, filling your big hives with bees. Hustlers, hardy, wintering on summer stands. No disease; 36 years in this location. Purity and satisfaction guaranteed.

Untested—Each, \$1.25; 6 for \$7.00; 12 for \$12.00. Select Untested, add 50c each extra. Tested, \$2.00 each.

Send for circular.

E. F. QUIGLEY & SON
UNIONVILLE, MISSOURI.

ATTENTION, PRODUCERS! NEW HONEY CROP

We are ready to receive your new crop advices, sending us samples and state price wanted, how packed, and quantity can ship. Terms, cash on arrival.

HOFFMAN & HAUCK, INC., WOODHAVEN NEW YORK

BANKING BY MAIL AT

A.T. Spitzer
PRES.

E.R. Root
VICE PRES.

E.B. Spitzer
CASHIER

No Matter Where You Live

you can send your money to us and have it under your own control, earning 4% interest, in absolute safety. Ask us to send you our "Banking by Mail" booklet.

4%

The SAVINGS DEPOSIT BANK CO.
THE HOME OF THE HONEY-BEE MEDINA, OHIO

Lockhart's Silver-gray Carniolans

"LINE BRED" for the past 34 years. They are VERY hardy, gentle, prolific, great workers, and builders of VERY WHITE comb, and use mostly wax in place of propolis. Prices of queens for 1922: Untested queens, \$1.00; select untested, \$1.50; tested, \$2.00; select tested, \$3.00. Breeders, \$5.00, \$10.00. Safe arrival guaranteed in U. S. and Canada. No foul brood here.

F. A. LOCKHART & COMPANY, LAKE GEORGE, NEW YORK

HONEY

We are in excellent position to serve beekeepers who do not produce enough Honey to supply their trade.

We have a big stock of fine table honey of various grades always on hand. In 60-lb. Tins Crystallized—Water White Orange, 15c; White Sage, 14c; Extra L. A. Sage, 12c; Buckwheat, 10c.

GLASS AND TIN HONEY CONTAINERS.

2½-pound cans.....	Crates of 100, \$4.50
5-lb. pails (with handles), 1 dozen reshipping cases.....	\$1.00 case; crates of 100, \$7.00
10-lb. pails (with handles).....	Crates of 50, \$5.25
60-lb. tins, 2 per case.....	New, \$1.20 case; used, 25c

White Flint Glass, with Gold Lacquered Wax Lined Caps.

8-oz. honey capacity .. \$1.50 per carton of 3 doz.
16-oz. honey capacity .. \$1.20 per carton of 2 doz.
Qt. 3-lb. honey capacity .90c per carton of 1 doz.

HOFFMAN & HAUCK, Inc.

WOODHAVEN, NEW YORK.

CENTRALLY
LOCATED
TO
SERVE
NEW
ENGLAND
BEEKEEPERS.



ORDERS
FILLED
PROMPTLY.
—
CATALOG
ON
REQUEST.

BEE SUPPLIES

F. COOMBS & SONS, BRATTLEBORO, VERMONT

DON'T DELAY...GET OUR PRICES
WE SAVE YOU MONEY

"falcon"

SUPPLIES ... QUEENS ... FOUNDATION

W. T. FALCONER MFG. COMPANY

FALCONER (Near Jamestown) NEW YORK

"Where the best beehives come from."

Queens Queens



Knight's Three-Banded

Give them a trial and be added to my book of satisfied customers.

Prices for Balance of Season.

1 Select Untested.....	\$1.00
5 Select Untested.....	4.75
10 Select Untested.....	8.50
Tested Queens, each....	2.00

For large quantities write for prices. Have the bees, men and equipment to handle rush orders by return mail. Pure mating and satisfaction guaranteed. It is left with customer to say what is satisfaction. No disease.

JASPER KNIGHT

HAYNEVILLE - - ALABAMA

Bee Supplies

SPECIAL PRICES ON THE FOLLOWING NO. 2 SECTIONS.

100,000 4 1/4 x 4 1/4 x 1 1/2 Plain	at \$7.00 per 1000
50,000 4 1/4 x 4 1/4 x 1 3/4 Two-beeway	at \$8.00 per 1000

The above are all packed 500 to a crate.

REDUCED PRICES ON TIN AND GLASS HONEY CONTAINERS.

Send us a list of your requirements of containers, and we will make you prices that will save you money.

We can make shipment the same day order is received.

We carry a complete line of EVERYTHING FOR THE BEEKEEPER, and can make prompt shipment. Write for our catalog.

A. H. RUSCH & SON CO.
REEDSVILLE, WISCONSIN.

Leininger's Strain of ITALIANS

have been carefully bred for the last 35 years. As to gentleness and honey-gathering qualities they are unsurpassed. We will offer for sale 200 tested queens, during August at \$1.50 each; 6 or more, \$1.25 each; these are queens from our best stock and will give entire satisfaction.

**FRED LEININGER & SON
DELPHOS, OHIO.**

QUEENS

ITALIANS - CARNIOLANS - GOLDENS

We ship thousands of queens and thousands of pounds of bees all over the United States and Canada every year.

2-comb regular Nuclei, no extra bees	\$3.75
3-comb regular Nuclei, no extra bees	5.25
2-comb regular Nuclei with 1 pound extra bees	5.25
1-comb regular Nuclei with 2 pounds extra bees	5.25
1-lb. pkg. bees, \$2.25 ea.; 25 or more	2.15
2-lb. pg. bees, \$3.75 ea.; 25 or more	3.60
3-lb. pkg. bees, 5.25 ea.; 25 or more	5.00

QUEEN FREE with all of the above packages except 1-pound size; will furnish them at half price with these.

PRICES OF QUEENS ONLY.

1 Untested Queen, \$1.05 each; 25 or more, 91c each; per 100.....	\$85.00
1 Select Untested, \$1.19 each; 25 or more, \$1.05 each; per 100.....	95.00
1 Tested Queen, \$1.57; 25 or more, each.....	1.40
1 Select Tested Queen, \$1.85 each; 25 or more, each.....	1.57
Breeders, each.....	\$5.00, \$10.00 and 15.00

Send for FREE circular.

NUECES COUNTY APIARIES, Calallen, Texas
E. B. AULT, Prop.

Requeen With **Forehand's 3-Bands**

They Satisfy; Why?

Because they are guaranteed to be as good as money can buy. Not a cheap queen but a queen of the best at a cheap price. Every queen guaranteed to reach destination in first-class condition, to be purely mated and give perfect satisfaction or money back. Orders filled by return mail.

Untested, 1 to 25, 90c each; 25 to 50, 80c each; 50 to 100, 75c each. Select Untested, \$1 each. Tested, \$1.75 each.

Better Queens for Less Money

N. FOREHAND, RAMER, ALA.

SCOTT QUEENS ARE GOOD QUEENS

MY QUEENS ARE GETTING RESULTS.

Among my hundreds of colonies and for my customers. One writes: "Dear Mr. Scott: Please book me for $\frac{1}{2}$ doz. queens. Those I got from you last season have made 150 lbs. comb honey each so far this season. Yours truly."—(Name on request.)

GOLDEN OR THREE-BANDED QUEENS.

After July 1: One, \$1.25; six, \$7.00; dozen, \$13.00. They are bound to please. Pure mating and safe arrival. Prompt shipments. Circular on request.

ROSS B. SCOTT, LA GRANGE, INDIANA.



"Marugg's Special"

IMPORTED MOWING BLADES

And Sickles with DANGEL cutting edge "THE MARUGG SPECIAL" are praised by thousands of users in the United States. Used by leading apiarists. Write for particulars to THE MARUGG COMPANY, Dept. B, TRACY CITY, TENN.

FOR SALE.—Safety Comb honey cartons for sections, size $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{8}$; $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$; $4 \times 5 \times 1\frac{1}{8}$; $4 \times 5 \times 1\frac{1}{2}$; $3\frac{1}{2} \times 5 \times 1\frac{1}{2}$; $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{8}$; $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$; $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{4}$; $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{8}$; for 50 cents per hundred, so long as present stock last. Sections equipped with these safety cartons will fit in the regular 24-pound shipping cases and insure safe shipment of honey. They are appropriately printed on all four sides. Send for sample.

THE A. I. ROOT COMPANY, Medina, Ohio.

Collier's Bees and Queens

Breeding Queens Imported from Italy.

THREE-BANDED ITALIANS ONLY. Shipped by return mail.

Let me have your order for the 1922 season. My queens are bred by men who know how. Every order given my personal attention. All queens reared in strong two-story, ten-frame hives, under natural conditions.

Improve your weak, run-down colonies by using young, vigorous three-banded Italian Queens from my imported stock.

You take no risk buying from Collier. If you are not satisfied I will replace or refund your money. Safe delivery guaranteed. Prices: Untested—1, 70c; 6, \$4.00; 12, \$7.75; 24, \$15.00; 100, \$57.00. Select Untested—1, 90c; 6, \$5.00; 12, \$9.00; 100, \$70.00. Tested Queens—\$1.50 each. Select Tested—\$2.00 each.

D. E. Collier

Ramer - - - Alabama

That Pritchard Queens AND Pritchard Service

made a hit last season is proven by the many letters of appreciation and repeated orders received. This year we are BETTER PREPARED WITH a LARGER OUTFIT AND REDUCED PRICE.

THREE-BANDED ITALIANS.

Untested \$1.25 each; 6 for \$7.00
Select Untested..... \$1.50 each; 6 for \$8.50
Select Tested each \$3.00

Queens clipped free on request. We are booking orders now. Send yours at once and we will do our best to ship on date you desire. Acknowledgment and directions for introducing sent on receipt of order. Safe arrival and satisfaction guaranteed. Remit by money order or check.

ARLIE PRITCHARD

R. F. D. No. 3.

MEDINA, OHIO

CALIFORNIA BEEKEEPER RECOMMENDS

THAGARD ITALIAN QUEENS

BRED FOR QUALITY

"The queens I ordered from you in April are wonders. I have never had more prolific queens, and I have purchased queens from over twelve breeders. She is prolific, brood as compact and even as a brick wall. And her progeny are large, uniformly marked, medium-colored three bands.

"Of the twelve breeders I have received queens from, only three have stood the test besides yours. Why? Simply because most breeders breed for color. Your queens speak for themselves."—W. A. Holmberg, Denair, Calif.

Untested Queens, each, 1 to 6, \$1.00; 6 to 49, 75c; 49 to 99, 70c; 100 or more, 65c.

THE V. R. THAGARD CO.

GREENVILLE - - ALABAMA

NORTHWESTERN HEADQUARTERS FOR

ITALIAN QUEENS

Reduced Prices for the Remainder of the Season

In order to keep running to the maximum, we are offering our Unsurpassed Italian Queens during August and September at the following reduced prices:

Untested Italian Queen.
1, \$1.00; 6, \$5.75; 12, \$11.00; 50, \$45.00; 100, \$85.00.

Tested Italian Queen,
1, \$2.00; 6, \$11.00.

J. D. HARRAH

ROUTE 1.

FREEWATER, OREGON



High Quality Three-Banded ITALIAN Queens

BY RETURN MAIL

Untested Queens, 1, \$1.00; 6, \$5.50;
12, \$10.00; 25, \$20.00.

Select Untested, 1, \$1.15; 6, \$6.20; 12,
\$11.40; 25, \$22.25.

Select Tested, \$1.75 each.

Safe delivery and fullest satisfaction
guaranteed.

FRANK BORNHOFFER

MT. WASHINGTON (CINCINNATI), OHIO

Norman Brothers' Queens

Mr. Beekeepers, if you want good quality, quick service, prompt attention, and perfect satisfaction, TRY NORMAN BROS., pure 3-banded Italian Bees and Queens. And see for yourself. We are not going to say that we have the best bees in the United States, but we do say that we have as good as can be bought. And we are going to send out just what we are advertising; you risk not one penny. If you are not satisfied with them we will replace them or refund your money. Isn't this a fair proposition to any one that wishes to purchase queens? If you have not tried our strain of bees, now is a good time, for we are going to have a number of good queens for the months of August and September, and we can make shipment by return mail. Our bees are hardy, prolific, gentle, disease-resisting and honey-gatherers. We guarantee pure mating, free from diseases and satisfaction, and safe arrival in U. S. A. and Canada.

1	6	12	50
Untested queens... \$0.70	\$4.00	\$7.75	\$30.00
Select Untested... 1.00	5.00	9.00	35.00
Tested queens... 1.35	7.50	13.50	
Select Tested... 1.50	8.50	19.00	

NORMAN BROS.' APIARIES
NAFTEL - - - ALABAMA



BUCKWHEAT ITALIAN QUEENS

Our very best queens are reared this month and next, during the flow from buckwheat and goldenrod. Conditions are ideal for queen-rearing now. Now is the time to requeen.

SELECT THREE-BANDED

(Note)—We had to return a few orders in June and July, but expect to meet the demand during balance of the season. Kindly ask for price and mailing date on lots above 25.)

Untested, each, \$1.25; 6, \$7.00; 12, \$13.00; 25, \$25.00.

WE GUARANTEE

safe arrival in U. S. and Canada, pure mating, no disease, and satisfaction.

J. B. HOLLOPETER

ROCKTON, PENNSYLVANIA.

FREE QUEENS

3-Banded

Goldens

For August to make new customers we offer our fine strain of honey-gatherers at the lowest prices possible, and for ten of the highest honey records made from colonies headed with our queens, we will give one fine tested 3-banded or Golden queen free to each. For quick service send us your order. Now is the time to requeen.

Quality Queens—August Prices.

Untested, 1 to 12.....	\$0.85 each
Sel. Untested, 1 to 12.....	1.15 each
Sel. Tested	2.00 each

Wings clipped free on request. Entire satisfaction and safe arrival guaranteed in U. S. and Canada.

Ohio Valley Bee Company

CATLETTSBURG, KY.

NEW PRICES

On Friction Top Cans and Pails

We quote as follows:

	25	50	100	200	500	1000
2½-lb. cans.....	\$1.15	\$2.15	\$4.10	\$7.75	\$18.75	\$36.00
5 -lb. pails.....	1.90	3.50	6.50	12.00	28.25	55.50
10 -lb. pails.....	2.75	5.00	9.50	18.00	43.00	83.00

All packed in fibre containers. They keep neat and clean till you use them. Prices F. O. B. cars Lansing and not from some distant shipping point.

Send in Your Order

FIVE-GALLON CANS—1¾-inch screw top, packed two in a case.
Prices as follows:

Each, \$1.40; 10 Cases, \$13.00; 25 Cases, \$30.00; 50 Cases, \$57.50;
100 Cases, \$110.00.

Shipping cases for comb honey. Folding cartons for comb honey.
F. O. B. cars Lansing, not from some distant shipping point.

Send in Your Order

"A" GRADE TIN PASTE.

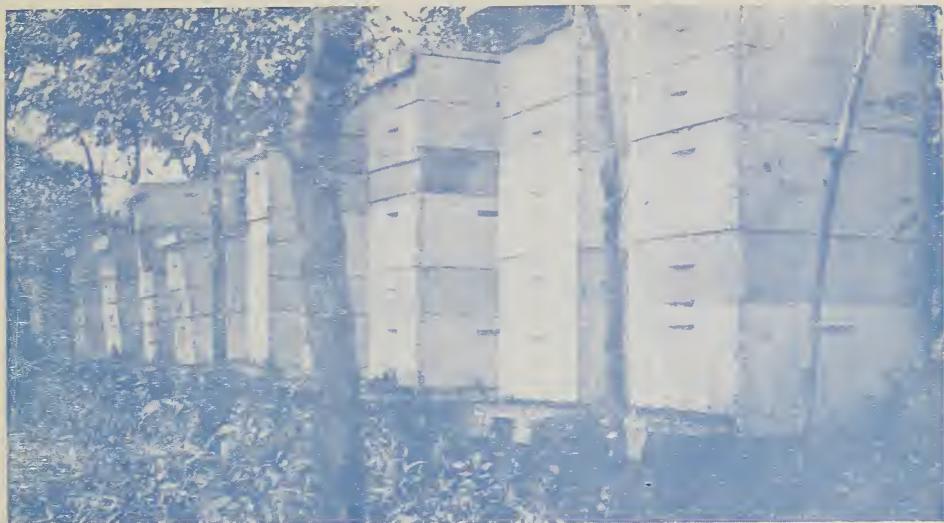
Just what you want for attaching labels to tin and glass containers.
It sticks. Prices as follows:
1 Pt., 25c; 1 Qt., 45c; 1 Gal., \$1.50.
Postage extra. REMEMBER

IT STICKS

M. H. HUNT & SON

510 North Cedar Street

LANSING, MICHIGAN



Achord's Italians Are Good Bees

Whether you have only a few colonies or five hundred, we believe you will like them and they will prove a worthy addition to your yard. They are a bright, hustling, three banded strain, bred primarily for honey production, but also gentleness and color. We have spared neither labor nor expense to make them the very best.

Price of Queens, June 15th to October 1.

Untested.....	1 to 19, 75c each; 20 or more, 70c each
Select Untested	\$1.10 each; 5 or more, \$1.00; 10 or more, 90c; 25 or more, 80c
Tested.....	\$1.75 each; 5 or more, \$1.65

Safe arrival and satisfaction guaranteed.

W. D. ACHORD, FITZPATRICK, ALABAMA.





Selling by the roadside.

Honey Selling Service

For Honey Producers

How to market—

Our new free booklet, just off the press, tells all about markets, roadside selling helps, selling at county fairs, selling to groceries, to retail buyers, or to commission men. It tells how to grade, pack and ship, what containers to use to secure highest prices, and everything else you should know in order to market your crop and protect yourself.

How to advertise—

This same free booklet tells how to best advertise your product locally so as to arouse interest; how to educate the public to the true food value and delicacy of honey, in order that you may be able to move your crop quickly.

How to Pack—

We tell you in this free booklet how to select good, substantial containers, cans, pails, shipping cases and cartons. Also how to pack comb honey for safe shipment. We tell what containers **should not** be used, and why. We explain how to put up honey in jars in the most attractive manner.

Send for this booklet, "How to Sell Honey."
It's Free.

What You Should Buy for Immediate Use

LABELS—Attractive labels are important. We have them. A whole catalog of new and attractive designs. We do special printing for beekeepers. We sell paste that will stick to both tin and glass. Send for this handsome new label catalog today.

CONTAINERS—Our containers are good and substantial. Our comb-honey cartons are very attractive. Our prices are low and will surely interest you. Send for prices at once.

THE A. I. ROOT CO., MEDINA, O.

Fifty-two Years in the Beekeeping Business
WEST SIDE STATION